



THE
SENIOR READER.

- I.—THE WORLD WE LIVE IN.
- II.—THE LAND WE LIVE IN.
- III.—HOME AND COUNTRY SCENES, &c.
- IV.—THE AGE WE LIVE IN.
- V.—ROUND THE WORLD.



LONDON:
T NELSON AND SONS, PATERNOSTER ROW,
EDINBURGH; AND NEW YORK.

1888.

Preface.

THIS volume forms the Third of "The Progressive Reading Books" in Nelson's School Series. Teachers will find it better adapted for the purposes of instruction, and at the same time more attractive to young people, than most of the Reading Books in common use.

The pieces have been selected chiefly from the best writers of the present day, and possess a freshness and interest hitherto wanting in similar Works.

A companion volume, designed for Advanced Classes, is in preparation. In it will be completed the Series of Lessons begun in the present volume under the title of "Round the World." Each, however, is complete in itself, and may be used separately.

Contents.

Those marked with a star (*) are Poetical Pieces.

PART I.

THE WORLD WE LIVE IN.

* Thou art, O God, the life and light,	Moore.	9
The Earth's Journey Round the Sun,	Professor Olmstead.	10
What is Gravitation?	Professor Olmstead.	11
The Stellar World,	Professor Mitchell.	13
The Air Ocean,	Maury, &c.	16
What is Air? ... ..	... ..	19
The Pressure of the Atmosphere, ... ..	... ..	23
* The Cloud,	Stedley	27
* The Evening Cloud,	Wilson.	29
Above the Clouds, ... ..	... ..	30
* The Rainbow,	Campbell.	33
The Waters of the Globe, ... ..	... ..	35
* The Ocean,	Byron.	37
* The Treasures of the Deep,	Mrs. Hemans.	38
The Crust of the Earth, ... ..	... ..	40
The Action of Climate upon Man,	Guyot.	45
* Hymn to the Creator,	Milton.	47
* Heaven Transcendently Glorious,	Bishop Heber	48

PART II.

THE LAND WE LIVE IN.

* Old England,	Mary Howitt.	50
* The Glory of Great Britain,	Thomson.	52
* The Patriot's Prayer for England,	Thomson.	55
The Wonders of Civilization,	Arnott.	56
* Commerce,	Cowper.	57
The Origin of the English Nation,	Macaulay	59

The Progress of England,	<i>Macaulay</i> ,	60
Pictures of the Olden Time:—		
Siege of Torquilstone (<i>Jeankec</i>),	<i>Sir Walter Scott</i> ,	62
The Trial by Combat (<i>Jeankec</i>),	<i>Sir Walter Scott</i> ,	72
* Marmion and Douglas (<i>Marmion</i>),	<i>Sir Walter Scott</i> ,	69
Travelling in England in the end of the Seventeenth Century,	<i>Macaulay</i> ,	99
The Growth and Size of Cities,	<i>W. Kennedy</i> ,	93
* Westminster Abbey,	<i>Thomas Miller</i> ,	97
Our English Bible,	<i>W. F. Collier</i> ,	99

PART III.

HOME AND COUNTRY SCENES, &c.

* The Sky-lark,	<i>James Hogg</i> ,	102
* An English Peasant,	<i>George Crabbe</i> ,	103
* The Holly Tree,	<i>Robert Southey</i> ,	104
* The Four Eras,	<i>Rogers</i> ,	106
* The Deserted Village,	<i>Goldsmith</i> ,	107
* The Village Preacher,	<i>Goldsmith</i> ,	108
* On the Receipt of my Mother's Picture,	<i>Coleridge</i> ,	110
* Elegy written in a Country Churchyard,	<i>Gray</i> ,	112
* The Cotter's Saturday Night,	<i>Burns</i> ,	116
* The Cottager,	<i>Coleridge</i> ,	119

PART IV.

THE AGE WE LIVE IN.

Modern Inventions and their Results,	<i>Fergusson</i> ,	120
London and its Food,	<i>Dr. Wynter</i> ,	123
The Bank of England—Gold, Silver, and Copper, ... ..	... ..	127
The Royal Exchange,	<i>Addison</i> ,	130
Coal,	<i>B. Ellis, &c.</i> ,	133
The Lighting of Modern Towns, ... ..	... ..	136
Iron,	<i>Tonnison</i> ,	140
The Chemistry of a Candle,	(<i>"Household Words"</i>) (<i>and Faraday</i>),	144
Hearths and Homes in the Olden Time,	<i>Merrivale</i> ,	151
Wonders of the Cotton Manufacture, ... ..	... ..	152
The Silk Manufacture, ... ..	... ..	153
The Flax Plant and Linen Manufactures, ... ..	... ..	162
Wool, ... ..	... ..	164
Penny Postage,	<i>J. H. Peto</i> ,	166
Origin and Progress of the Electric Telegraph,	<i>Dr. George Wilson</i> ,	169
* Cantata for the Opening of the Great Exhibition, 1862,	<i>Tennyson</i> ,	172

PART V.

ROUND THE WORLD.

* The Launching of the Ship,	<i>Longfellow.</i>	174
The Eddystone Light-house, ... ..	... ..	175
* The Light-house,	<i>Longfellow.</i>	182
* The Ship,	<i>John Wilson.</i>	184
Among the Shoals,	<i>J. Fenimore Cooper.</i>	185
* Dangers of the Deep,	<i>Southey.</i>	192
* Hymn to the North Star,	<i>Bryant.</i>	193
From the North Pole Star to the Sun,	<i>J. Sime.</i>	194
The North Pole,	<i>J. Sime.</i>	200
* The Ice World,	<i>Montgomery.</i>	207
* The Aurora Borealis,	<i>Montgomery.</i>	208
The First English Voyage to the Arctic Seas,	<i>"Polar Seas."</i>	209
The Frozen Ship, ... ..	... ..	211
Ice, Glaciers, and Icebergs, ... ..	... ..	214
Adventures in Spitzbergen, ... ..	... ..	218
Iceland, Mount Hecla, and the Geysers,	<i>Henderson, &c.</i>	220
The Icelanders, ... ..	... ..	224
Greenland, ... ..	... ..	227
The Greenlanders, ... ..	... ..	228
Industrial Arts of the Esquimaux—the Kayak, Sledge, &c.,	<i>Parry, &c.</i>	232
Animal Life in the Arctic Regions, ... ..	... ..	235
The Seal, ... ..	... ..	238
The Walrus, ... ..	... ..	241
A Walrus Hunt,	<i>Dr. Kane.</i>	244
Snow,	<i>Parry, &c.</i>	247
Snow Huts, ... ..	... ..	250
Why Fat is the best Food in Cold Regions,	<i>Dr. George Wilson.</i>	252
The Whale Fishery,	<i>"Polar Seas," &c.</i>	257
Capturing the Whale, ... ..	... ..	259
The Last Search for Franklin,	<i>J. H. Fife.</i>	262
* Sir John Franklin,	<i>"Punch."</i>	272
Henry Hudson, ... ..	... ..	273
The Fur Countries,	<i>R. M. Ballantyne.</i>	276
Trapping Animals, ... ..	... ..	281
The Skater and the Wolves,	<i>Whithead.</i>	285
The Beaver,	<i>Abbott.</i>	289
The Siege of Quebec,	<i>Major Warburton.</i>	292
The Great Lakes and the Falls of Niagara, ... ..	... ..	297
* To the Falls of Niagara,	<i>J. S. Buckingham.</i>	299
The Atlantic Ocean and the Telegraph,	<i>Maury & Dr. G. Wilson.</i>	301
The Gulf Stream,	<i>Maury.</i>	304
* The Pilgrim Fathers,	<i>Mrs. Hemans.</i>	309

* Washington,	<i>Eliza Cooke.</i>	311
Voyage across the Atlantic in a Sailing Vessel, ...	<i>Washington Irving.</i>	312
Scenes from "Uncle Tom's Cabin:"—		
The Escape,	<i>Mrs. Stowe.</i>	317
Topsy,	<i>Mrs. Stowe.</i>	322
Death of Uncle Tom,	<i>Mrs. Stowe.</i>	327
* Slave Singing at Midnight,	<i>Longfellow.</i>	329
* Slavery,	<i>Cooper.</i>	330
The Humming-Bird,	<i>Audubon.</i>	331
The Cotton Plant, ... ..	... ..	333
* The Slave's Dream,	<i>Longfellow.</i>	337
* The Prairies,	<i>Bryant.</i>	338
The Prairie on Fire,	<i>J. Fenimore Cooper.</i>	340
Description of a Bee Hunt,	<i>Washington Irving.</i>	346
Wild Horses of the Prairie, ... ..	... ..	349
Capturing the Wild Horse,	<i>Washington Irving.</i>	352
The Buffalo, ... ..	... ..	356
* The Indian Hunter,	<i>Longfellow.</i>	361
* The Last of the Red Men,	<i>Bryant.</i>	362
The First Voyage of Columbus,	<i>Washington Irving.</i>	363
Discovery of America,	<i>Robertson.</i>	366
The Return of Columbus to Europe,	<i>Prescott.</i>	367
* The West Indies,	<i>Montgomery.</i>	371

SENIOR READER.

THOU ART, O GOD.

THOU art, O God, the life and light
Of all this wondrous world we see ;
Its glow by day, its smile by night,
Are but reflections caught from Thee :
Where'er we turn, Thy glories shine,
And all things fair and bright are Thine !

When Day, with farewell beam, delays
Among the op'ning clouds of Even,
And we can almost think we gaze
Through golden vistas into Heaven—
Those hues that mark the sun's decline,
So soft, so radiant, Lord, are Thine.

When Night, with wings of starry gloom,
O'ershadows all the earth and skies,
Like some dark, beauteous bird, whose plume
Is sparkling with a thousand eyes—
That sacred gloom, those fires divine,
So grand, so countless, Lord, are Thine.

When youthful Spring around us breathes,
Thy Spirit warms her fragrant sigh ;
And ev'ry flower the Summer wreathes
Is born beneath that kindling eye :
Where'er we turn, Thy glories shine,
And all things fair and bright are Thine !

MOORE.

THE EARTH'S JOURNEY ROUND THE SUN.

ONE, two, three, four, five! Does the reader know that while he has been counting these five beats, five seconds, he has actually been conveyed through space a distance of more than a hundred miles? Yet so it is. However incredible it may seem, no fact is more certain than that the earth is constantly on the wing, flying around the sun with a velocity so prodigious, that for every breath we draw we advance on our way forty or fifty miles. If, when passing across the waters in a steam-boat, we can wake, after a night's repose, and find ourselves conducted on our voyage a hundred miles, we exult in the triumphs of art, which has moved so ponderous a body as a steam-ship over such a space in so short a time, and so quietly, too, as not to disturb our slumbers; but, with a motion vastly more quiet and uniform, we have, in the same interval, been carried along with the earth in its orbit more than half a million of miles. In the case of the steam-ship, however perfect the machinery may be, we still, in our waking hours at least, are made sensible of the action of the forces by which the motion is maintained,—as the roaring of the fire, the beating of the piston, and the dashing of the paddle-wheels; but in the more perfect machinery which carries the earth forward on its grander voyage, no sound is heard, nor the least intimation afforded of the stupendous forces by which this motion is achieved.

The distance of the sun from the earth is about ninety-five millions of miles. No human mind can comprehend fully what this vast distance means. But we may form some conception of it by such an illustration as this: A ship may leave Liverpool and cross the Atlantic to New York after twenty days' steady sail; but it would take that ship, moving constantly at the rate of ten miles an hour, more than a thousand years to reach the sun.

And yet, at this vast distance, the sun, by his power of attraction, serves as the great regulator of the planetary motions, bending them continually from the straight line in which they tend to move, and compelling them to circulate around him, each at nearly

a uniform distance, and all in perfect harmony. We shall afterwards explain the manner in which the *gravity* of the sun acts in controlling the planetary motions. For the present, let us content ourselves with reflecting upon the wonderful force which the sun must put forth to bend out of their courses into circular orbits such a number of planets, some of them more than a thousand times larger than the earth. Were a ship of war under full sail, we can easily imagine what a force it would require to turn her from her course by a rope attached to her bow—especially were it required that the force should remain stationary, and the ship be so held as to be made to go round the force as round a centre. Somewhat similar to this, but on a much grander scale, is the action which is exerted on the earth in its journey round the sun. By an invisible influence, which we call *gravitation*, the sun turns all the planets out of their course, and bends them into a circular orbit round himself, though they are all many millions of times more ponderous than the ship, and are moving many thousand times more swiftly.

WHAT IS GRAVITATION ?

It was at one time supposed that we could never reason respecting the laws that govern the heavenly bodies from what we observe in bodies around us,—that motion is one thing on the earth and quite another thing in the skies; and hence, that it would be impossible for us, by any inquiries into the laws of terrestrial nature, to ascertain how things take place among the heavenly bodies. Galileo and Newton, however, proceeded on the contrary supposition, that Nature is uniform in all her works,—that the same Almighty arm rules over all, and that he works by the same fixed laws through all parts of his boundless realms.

We discover in nature a tendency of every portion of matter towards every other. This tendency is called the law of *gravitation*. In obedience to this power, a stone falls to the ground, and a planet revolves around the sun. The former is an example of what we call *gravity*; the latter, an example of *universal gravitation*. The

laws of terrestrial gravity were first investigated by Galileo ; those of universal gravitation, by Sir Isaac Newton. Terrestrial gravity is only an individual example of universal gravitation, being the tendency of bodies towards the centre of the earth. We are so much accustomed, from our earliest years, to see bodies fall to the earth, that we imagine they must of necessity fall "downwards;" but when we reflect that the earth is round, and that bodies fall towards the centre on all sides of it,—and that, of course, on opposite sides of the earth they fall in precisely opposite directions, and towards each other,—we perceive that there must be some force acting to produce this effect. Every motion implies some force which produces it; and the fact that bodies fall towards the earth, on all sides of it, leads us to infer that that force, whatever it is, resides in the earth itself. We therefore call it *attraction*. We do not, however, say what attraction *is*, but what it *does*. We must bear in mind, also, that this attraction is mutual—that when a stone falls towards the earth, it exerts the same force on the earth that the earth exerts on the stone; but the motion of the earth towards the stone is as much less than that of the stone towards the earth as its quantity of matter is greater, and therefore its motion is quite imperceptible.

But although we are compelled to acknowledge the *existence* of such a force as gravity, causing a tendency in all bodies towards each other, yet we know nothing of its *nature*, nor can we conceive by what medium bodies at such a distance as the sun and the earth exercise this influence on each other. Yet we know that it is this which, acting across an interval of ninety-five millions of miles, holds the earth as surely in its orbit as if it were connected by a chain to the sun; and the same force holds all the other planets in their orbits.

It is a law of nature that a body when at rest remains so, unless some force puts it in motion; but when once in motion it will continue to move for ever, unless something stops it. When a ball is rolled on the ground, the friction of the earth and the resistance of the air soon stop its motion; when rolled on smooth ice it will go much further, because the ice opposes much less resistance than

the ground, and were there no impediment to its motion it would continue to move for ever. The earth, and all the other planets which revolve around the sun as their common centre, are actually in this condition. They would fly off into space, and continue to move for ever in a straight line; but, held in check, in obedience to the laws of Him who created them and gave them motion, they circulate in their appointed orbits.

The spacious firmament on high,
With all the blue ethereal sky,
And spangled heav'ns, a shining frame,
Their great Original proclaim.
Th' unwearied sun, from day to day,
Does his Creator's power display;
And publishes to ev'ry land
The work of an Almighty hand.

Soon as the ev'ning shades prevail,
The moon takes up the wondrous tale,
And, nightly to the list'ning earth,
Repeats the story of her birth;
While all the stars that round her burn,
And all the planets in their turn,
Confirm the tidings as they roll,
And spread the truth from pole to pole.

What though in solemn silence all
Move round the dark terrestrial ball?
What though no real voice, nor sound,
Amidst their radiant orbs be found?
In Reason's ear they all rejoice,
And utter forth a glorious voice;
For ever singing, as they shine,
"The hand that made us is divine."

ADDISON.

THE STELLAR WORLD.

VAST as the solar system appears to us, it forms but a single star system in the stellar world. What we call the *fixed stars* are suns

like our own, each attended by a retinue of planetary orbs, and guided by the same laws that regulate our own solar system. The number and distances of these systems of stars far exceed man's powers of comprehension.

"If," says an eloquent writer, "there be anything which can lead the mind upward to the Omnipotent Ruler of the universe, it is to be found in the grandeur and beauty of his works. If you would know his *glory*, examine the interminable range of suns and systems which crowd the Milky Way. Multiply the hundred millions of stars which belong to our own 'island universe,' by the thousands of those astral systems that exist in space within the range of human vision, and then you may form some idea of the infinitude of his kingdom; for, lo! these are but a part of his ways. Examine the scale on which the universe is built. Comprehend, if you can, the vast dimensions of our sun. Stretch outward through his system, from planet to planet, and circumscribe the whole within the immense circumference of Neptune's orbit. This is but a single unit out of the myriads of similar systems. Take the wings of light, and flash with impetuous speed, day and night, and month and year, till youth shall wear away, and middle age is gone, and the extremest limit of human life has been attained;—count every pulse, and at each speed on your way a hundred thousand miles, and, when a hundred years have rolled by, look out, and, behold! the thronging millions of blazing suns are still around you, each separated from the other by such a distance that, in this journey of a century, you have only left half a score behind you.

"Would you gather some idea of the *eternity* past of God's existence, go to the astronomer, and bid him lead you with him in one of his walks through space; and, as he sweeps outward from object to object, from universe to universe, remember that the light from those filmy stains on the deep pure blue of heaven, now falling on your eye, has been travelling space for a million of years.

"Would you gather some knowledge of the *omnipotence* of God, weigh the earth on which we dwell, then count the millions of its inhabitants that have come and gone for the last six thousand

years. Unite their strength into one arm, and test its power to move this earth. It could not stir it a single foot in a thousand years; and yet, under the omnipotent hand of God, not a minute passes that it does not fly far more than a thousand miles. But this is a mere atom—the most insignificant point among his innumerable worlds. At his bidding, every planet, and satellite, and comet, and the sun himself, fly onward in their appointed courses. His single arm guides the millions of sweeping suns; and around his throne circles the great constellation of unnumbered universes.

“Would you comprehend the idea of the *omniscience* of God, remember that the highest pinnacle of knowledge reached by the whole human race, by the combined efforts of its brightest intellects, has enabled the astronomer to compute approximately the perturbations of the planetary worlds. He has predicted, roughly, the return of half a score of comets. But God has computed the mutual perturbations of millions of suns, and planets, and comets, and worlds without number, through the ages that are past, and throughout the ages which are yet to come, not approximately, but with perfect and absolute precision. The universe is in motion—system rising above system, cluster above cluster, nebula above nebula—all majestically sweeping around under the providence of God, who alone knows the end from the beginning, and before whose glory and power all intelligent beings, whether in heaven or on earth, should bow with humility and awe.

“Would you gain some idea of the *wisdom* of God, look to the admirable adjustments of the magnificent retinue of planets and satellites which sweep around the sun. Every globe has been weighed and poised, every orbit has been measured and bent to its beautiful form. All is changing; but the laws fixed by the wisdom of God, though they permit the rocking to and fro of the system, never introduce disorder, or lead to destruction. All is perfect and harmonious, and the music of the spheres that burn and roll around our sun is echoed by that of ten millions of moving worlds, that sing and shine around the bright suns that reign above.”

THE AIR-OCEAN.

ENVELOPING this solid globe of ours are two oceans, one partial, the other universal. There is the ocean of water, which has settled down into all the depressions of the earth's surface, leaving dry above it all the high lands, as mountain ranges, continents, and islands ; and there is an ocean of air, which inwraps the whole in one transparent mantle. Through the bosom of that ocean, like fishes with their fins and whales with their flippers, birds and other winged creatures swim ; whilst, like crabs and many shell-fish, man and other mammalia creep about at the bottom of this aerial sea.

The air-ocean, which everywhere surrounds the earth, and feeds and nourishes it, is even more simple, more grand, and more majestic, than the "world of waters ;" more varied and changeful in its moods of storm and calm, of ebb and flow, of brightness and gloom. The atmosphere, is indeed, a wonderful thing, a most perfect example of the economy of nature. Deprived of air, no animal would live, no plant would grow, no flame would burn, no light would be diffused. The air, too, is the sole medium of sound. Without it, mountains might fall, but it would be in perfect silence—neither whisper nor thunders would ever be heard.

The atmosphere is supposed to extend from the earth to a height of between forty and fifty miles.

A philosopher of the East, with a richness of imagery truly Oriental, thus describes it :—"It surrounds us on all sides, yet we see it not ; it presses on us with a load of fifteen pounds on every square inch of surface of our bodies, or from seventy to one hundred tons on us in all, yet we do not so much as feel its weight. Softer than the softest down, more impalpable than the finest gossamer, it leaves the cobweb undisturbed, and scarcely stirs the lightest flower that feeds on the dew it supplies ; yet it bears the fleets of nations on its wings around the world, and crushes the most refractory substances with its weight. When in motion, its force is sufficient to level the most stately forests and stable buildings with the earth—to raise the waters of the ocean into ridges like moun-

tains, and dash the strongest ships to pieces like toys. It warms and cools by turns the earth and the living creatures that inhabit it. It draws up vapours from the sea and land, retains them dissolved in itself, or suspended in cisterns of clouds, and throws them down again as rain or dew when they are required. It bends the rays of the sun from their path, to give us the twilight of evening and of dawn; it disperses and refracts their various tints to beautify the approach and the retreat of the orb of day. But for the atmosphere, sunshine would burst on us and fail us at once, and at once remove us from midnight darkness to the blaze of noon. We should have no twilight to soften and beautify the landscape; no clouds to shade us from the scorching heat, but the bald earth, as it revolved on its axis, would turn its taunted and weakened front to the full and unmitigated rays of the lord of day. It affords the gas which vivifies and warms our frames, and receives into itself that which has been polluted by use, and is thrown off as noxious. It feeds the flame of life exactly as it does that of the fire;—it is in both cases consumed, and affords the food of consumption; in both cases it becomes combined with charcoal, which requires it for combustion, and is removed by it when this is over.”

“It is only the girdling, encircling air,” says another philosopher, “that flows above and around all, that makes the whole world kin. The carbonic acid with which to-day our breathing fills the air, to-morrow seeks its way round the world. The date-trees that grow around the falls of the Nile will drink it in by their leaves; the cedars of Lebanon will take of it to add to their stature; the cocoa-nuts of Tahiti will grow rapidly upon it; and the palms and bananas of Japan will change it into flowers. The oxygen we are breathing was distilled for us some short time ago by the magnolias of the Susquehanna, and the great trees that skirt the Orinoco and the Amazon;—the giant rhododendrons of the Himalayas contributed to it, and the roses and myrtles of Cashmere, the cinnamon-tree of Ceylon, and the forest older than the flood, buried deep in the heart of Africa. The rain we see descending was thawed for us out of the icebergs which have

watched the polar star for ages, and the lotus lilies have soaked up from the Nile, and exhaled as vapour, snows that rested on the summits of the Alps."

"The atmosphere which forms the outer surface of the habitable world is a vast reservoir, into which the supply of food designed for living creatures is thrown; or, in one word, it is itself the food, in its simple form, of all living creatures. The animal grinds down the fibre and the tissue of the plant, and the nutritious store that has been laid up within its cells, and converts these into the substance of which its own organs are composed. The plant acquires the organs and nutritious store thus yielded up as food to the animal, from the air surrounding it."

"But animals are furnished with the means of locomotion and of seizure—they can approach their food, and lay hold of and swallow it; plants must wait till their food comes to them. No solid particles find access to their frames; the restless ambient air, which rushes past them loaded with the carbon, the hydrogen, the oxygen, the water, everything they need in the shape of supplies, is constantly at hand to minister to their wants, not only to afford them food in due season, but in the shape and fashion in which alone it can avail them."

There is no employment more ennobling to man and his intellect than to trace the evidences of design and purpose in the Creator, which are visible in all parts of the creation. Hence, to him who studies the physical relations of earth, sea, and air, the atmosphere is something more than a shoreless ocean, at the bottom of which he creeps along. It is an envelope or covering for the dispersion of light and heat over the surface of the earth; it is a sewer into which with every breath we draw we cast vast quantities of dead animal matter; it is a laboratory for purification, in which that matter is recompounded and wrought again into wholesome and healthful shapes; it is a machine for pumping up all the rivers from the sea, and conveying the waters from their fountains in the ocean to their sources in the mountains; it is an inexhaustible magazine, marvellously adapted for benign and beneficent purposes.

MAURY.

WHAT IS AIR?

THE atmosphere is composed principally of two gases, oxygen and nitrogen. It contains also a small but variable proportion of watery vapour, and a still smaller proportion of carbonic acid gas. The leading characteristics of oxygen are, that it is the supporter of combustion, as fire will not burn without its presence; and it is also the life-sustaining element in the air we breathe. When a piece of charcoal, which is pure carbon, is burned in the open air, the combustion consists in the union of the carbon of the charcoal with the oxygen of the air, forming the compound, carbonic acid. When wood is burned, the process and the result are the same, with the exception that the wood is not wholly carbon, and the other ingredients appear during the combustion in the form of smoke and ashes. The rusting of metals is a slow combustion, termed *oxydation*; and whenever oxygen unites with any other element, some degree of heat is evolved in the process.

Iron and other metals burn with exceeding brilliancy in oxygen gas; and, what is more strange, the most intense heat known is produced by burning oxygen and hydrogen in the proportions which form water. Although no two things in nature are more opposite in character than fire and water, yet in this burning process the water is the product of the fire! Oxygen is heavier than common air, and may be poured from one vessel into another; yet it is invisible, inodorous, and tasteless, and can be detected only by its effects upon other bodies.

The other constituent of the atmosphere, nitrogen, or *azote*, is as inert in its properties as oxygen is active. In nitrogen no animal can live, no flame can burn; and its principal use in the atmosphere seems to be to dilute the oxygen, and subdue this wonderfully active being to the endless number of useful purposes required in the economy of nature. Every particle of oxygen in the atmosphere is accompanied by four particles of nitrogen; or, in other words, if we take a measure of any capacity full of atmospheric air, and divide it into five parts, the nitrogen will occupy

four parts, and the oxygen only one part : it is, however, an important and wonderful property of gases to mingle together so intimately, that, although oxygen is heavier than nitrogen, both these gases will be diffused through every part of the vessel ; and it is the same everywhere on the grand scale of nature.

Carbonic acid exists in the air in a very small proportion. At ordinary elevations there are only about two gallons of this gas in every 5,000 of air. It increases, however, as we ascend, so that at heights of 8,000 or 10,000 feet the proportion of carbonic acid is nearly doubled. Even this increased quantity is very small ; and yet its presence is essential to the existence of vegetable life on the surface of the earth. But, being heavier than common air, it appears singular that the proportion of this gas should increase as we ascend into the atmosphere. Its natural tendency would seem to be rather to sink towards the earth, and there to form a layer of deadly air, in which neither animal nor plant could live. But, independent of winds and aerial currents, which tend to mix and blend together the different gases of which the air consists, all gases, by a law of nature, tend to diffuse themselves through each other, and to intermix more or less speedily, even where the utmost stillness prevails and no wind agitates them.

The purposes which we know to be served by these several constituents of the atmosphere show both that they are all essential to the composition of the air, and that, in quantity as well as kind, they have been beneficently adjusted to the composition, the wants, and the functions of animals and of plants.

Thus, as to the oxygen—

From every breath of air which the animal draws into its lungs it extracts a quantity of oxygen. The oxygen thus obtained is a part of the natural food of the animal, which it can obtain from no other source, and new supplies of which are necessary to it every moment. The oxygen of the atmosphere, therefore, is essential to the very existence of life in the higher orders of animals. The candle burns, also, and all combustible bodies kindle in the air, only because it contains oxygen. This gas is a kind of necessary food to flaming and burning bodies ; so that, were it absent

from the earth's atmosphere, neither light nor heat could be produced from coal, wood, or other combustible substances.

But the proportion, also, in which oxygen exists in the air is adjusted to the existing condition of things. Did the atmosphere consist of oxygen only, the lives of animals would be of most brief duration, and bodies once set on fire would burn so fast as to be absolutely beyond control. The oxygen is, therefore, mixed with a large proportion of nitrogen. This gas, not being poisonous, as carbonic acid is, harmlessly dilutes the too active oxygen. It weakens and prolongs its action on the system, as water dilutes wine or spirits and assuages their too fiery influence upon the animal frame.

Then, as to the carbonic acid—

Every green leaf that waves on field or tree sucks in, during the sunshine, this gas from the air. It is as indispensable to the life of the plant as oxygen is to the life of the animal. Remove carbonic acid from the air, and all vegetable growth would cease.

But carbonic acid is poisonous to animals. It is for this reason that the proportion of this gas contained in the air is so very small. Were the proportion much greater than it is, animals, as they are now constituted, could not breathe the atmosphere without injury. On the other hand, that growing plants may be able to obtain a sufficiently large and rapid supply of carbonic acid from a gaseous mixture which contains so little, they are made to hang out their many waving leaves into the atmosphere. Over the surface of these leaves are sprinkled countless pores or mouths, which are continually employed in separating and drinking in carbonic acid gas. The millions of leaves which a single tree spreads out, and the constant renewal of the moving air in which they are suspended, enable the living plant to draw an abundant supply for all its wants.

This constant action of the leaves of plants is one of the natural agencies by which the proportion of carbonic acid in the lower regions of the atmosphere is rendered less than it is in the higher regions.

So, also, the watery vapour of the atmosphere is not less neces-

sary to the maintenance of life. The living plant consists of water to the amount of nearly three-fourths of its whole weight; and from the surface of its leaves water is continually rising into the air, in the form of invisible vapour.

Were the air absolutely dry, it would cause this water to evaporate from the leaves more rapidly than it could be supplied to them by the soil and roots. Thus they would speedily become flaccid, and the whole plant would droop, wither, and die.

The living animal, in like manner, is made up for the most part of water. A man of 154 lb weight contains 116 lb of water and only 38 lb of dry matter. From his skin and from his lungs water is continually evaporating. Were the air around him perfectly dry, his skin would become parched and shrivelled, and thirst would oppress his fevered frame. The air which he breathes from his lungs is loaded with moisture. Were that which he draws in entirely free from watery vapour, he would soon breathe out the fluids which fill up his tissues, and would dry up into a withered and ghastly mummy. It is because the simoom and other hot winds of the desert approach to this state of dryness that they are so fatal to those who travel on the arid waste.

Thus the moisture which the atmosphere contains is also essential to the maintenance of the present condition both of animal and vegetable life; it pervades the leaves and pores of plants, and finds admission to the lungs and general system of animals.

There are, besides, other beautiful purposes which this moisture serves. When the summer sun has sunk beneath the horizon, and coolness revisits the scorched plant and soil, the grateful dew descends along with it, and moistens alike the green leaf and the thirsty land; the invisible moisture of the air thickens into hazy mists, and settles in tiny pearls on every cool thing. How thankful for this nightly dew has nature everywhere and always appeared, and how have poets in every age sung of its beauty and beneficence!

THE PRESSURE OF THE ATMOSPHERE.

To persons who approach the subject for the first time, the pressure of the atmosphere seems to belong rather to the romance of science than to truth. "What! has the air any weight?" cries, perhaps, some astonished reader; and he becomes almost incredulous when gravely assured that it is pressing with a weight of fifteen pounds on every square inch of his body. A fish would find it difficult to believe that the element through which he is gliding has any weight, and yet we all know that water has weight, and exerts no small pressure on any vessel containing it. Thus it is with the atmospheric ocean. In both cases the reason why a body immersed does not experience this pressure is, that the fluid presses equally on all sides.

The common pump was invented 224 B.C., and soon afterwards it came into general use throughout the civilized world. The philosophers of the time explained its action by saying that when the piston was raised in pumping, a vacuum was formed over the water; but that "Nature abhorred a vacuum," and, consequently, filled it with water, as the most convenient material.

Some wells were very deep, and it was found that whenever the depth was more than 33 feet, the pumps were unable to raise the water. Centuries after the invention of the pump, some engineers asked Galileo why the water did not rise higher than 33 feet. He is said to have replied, that "Nature's abhorrence of a vacuum ceased at the height of 33 feet." Though the great Galileo did not know the true theory of the common pump, he certainly must have given such an answer rather in joke than in earnest.

It is supposed that he suggested to his pupil Torricelli that the weight of the air on the water surrounding the pump might force the water up into it when the pressure within was removed. Galileo died soon after, and the next year, 1643, Torricelli determined to ascertain if this was the true explanation. He thought that if the weight of the air was the cause, he could try the experiment of sustaining, by the pressure of the atmosphere,

a column of water 33 feet high in a tube closed at the upper end. This would have been a difficult experiment to perform; but, fortunately, he knew that the specific gravity of quicksilver was $13\frac{1}{2}$ times that of water. Of course a column of quicksilver $2\frac{1}{2}$ feet high would balance a column of water $13\frac{1}{2}$ times as high, or about 33 feet.

Torricelli took a glass tube more than $2\frac{1}{2}$ feet long, and filled it with quicksilver, and, after closing the upper end, inverted it, placing the open end below the surface of quicksilver in a cup before removing his thumb. As he expected, the quicksilver did not all run down into the cup, but stood at the height of 30 inches in the tube. Evidently the pressure of the atmosphere upon the quicksilver in the cup sustained the column in the tube; and as the tube was one inch in area, and the column of quicksilver weighed 15 pounds, not only was the pressure of the atmosphere on a square inch of surface ascertained, but the instrument called the *barometer* was invented—an instrument to show the pressure of the atmosphere at different times and in different places.

To afford further evidence that the weight of the atmosphere was the cause of the phenomenon, he afterwards carried the tube of mercury to the tops of buildings and of mountains, and found that it rose or fell exactly in proportion to the height at which he tried the experiment; and he also found that water-pumps, in different situations, varied as to sucking power according to the same law.

It was soon afterwards discovered, by careful observation of the mercurial barometer, that even when remaining in the same place, it did not always stand at the same elevation; in other words, that the weight of atmosphere over any particular part of the earth was constantly fluctuating; a truth which, without the barometer, could never have been suspected. The observation of the instrument being carried still further, it was found that in serene dry weather the mercury generally stood high, and that before and during storms and rain it fell; the instrument, therefore, it was soon perceived, might serve as a prophet of the weather, and become a precious monitor to the husbandman and the sailor.

When water which has been suspended in the atmosphere, and has formed a part of it, separates as rain, the weight and bulk of the mass are diminished; and the wind always blows when a sudden condensation of aeriform matter, in any situation, disturbs the equilibrium, for the air around rushes towards the situation of diminished pressure.

To the husbandman the barometer is of considerable use, by aiding and correcting the prognostics of the weather which he draws from local signs familiar to him; but it is still more useful to the mariner, who roams over the whole ocean, and is often under skies and in climates altogether new to him. The watchful captain of the present day, trusting to this extraordinary monitor, is frequently enabled to take in sail, and to make ready for the storm, where, in former times, the dreadful visitation would have fallen upon him unprepared.

The following incident will illustrate this:—"It was in a southern latitude. The sun had just set with placid appearance, closing a beautiful afternoon, and the usual mirth of the evening watch was proceeding, when the captain's order came to prepare with all haste for a storm. The barometer had begun to fall with appalling rapidity. As yet, the oldest sailors had not perceived even the threatening in the sky, and were surprised at the extent and hurry of the preparations; but the required measures were not completed when a more awful hurricane burst upon them than the most experienced had ever braved. Nothing could withstand it. The sails, already furled and closely bound to the yards, were riven away in tatters; even the bare yards and masts were in great part disabled, and at one time the whole rigging had nearly fallen by the board.

"Such, for a few hours, was the mingled roar of the hurricane above, of the waves around, and of the incessant peals of thunder, that no human voice could be heard; and, amidst the general consternation, even the trumpet sounded in vain. In that awful night, but for the little tube of mercury which had given warning, neither the strength of the noble ship nor the skill and energy of the commander could have saved one man to tell the tale. On

the following morning the wind was again at rest, but the ship lay upon the yet heaving waves, an unsightly wreck."

The marine barometer differs from that used on shore, in having its tube contracted in one place to a very narrow bore, so as to prevent that sudden rising and falling of the mercury which every motion of the ship would else occasion.

Civilized Europe is now familiar with the barometer and its uses, and, therefore, that Europeans may conceive the first feelings connected with it, they almost require to witness the astonishment or incredulity with which people of other parts regard it. A Chinese once conversing on the subject, could only imagine of the barometer that it was a gift of a miraculous nature, which the God of the Christians had given them in pity, to direct them in the long and perilous voyages which they undertook to unknown seas.

A curious result of the lessening of atmospheric pressure is seen in the difficulty which travellers experience in cooking victuals on high mountains. Meat cannot be cooked by the common method; the reason being, that the boiling water is not hot enough. The pressure of the air being less, the water more quickly rises into vapour, and the heat is thus carried off and the meat left uncooked.

Darwin relates a humorous anecdote of this nature. He was travelling in the Andes. "Our potatoes," says he, "after remaining for some hours in the boiling water, were nearly as hard as ever. The pot was left on the fire all night, and next morning it was boiled again, but yet the potatoes were not cooked. I found out this by overhearing my two companions discussing the cause. They had come to the conclusion that the potatoes were bewitched, or that the pot, which was a new one, did not *choose to boil them!*"

THE CLOUD.

I BRING fresh showers for the thirsting flowers,
From the seas and the streams;
I bear light shade for the leaves when laid
In their noon-day dreams;
From my wings are shaken the dews that waken
The sweet buds every one,
When rocked to rest on their mother's breast,
As she dances about the sun.
I wield the flail of the lashing hail,
And whiten the green plains under;
And then again I dissolve it in rain,
And laugh as I pass in thunder.

I sift the snow on the mountains below,
And their great pines groan aghast;
And all the night 'tis my pillow white,
While I sleep in the arms of the blast.
Sublime on the towers of my skiey bowers,
Lightning, my pilot, sits;
In a cavern under is fettered the thunder—
It struggles and howls by fits;
Over earth and ocean, with gentle motion,
This pilot is guiding me,
Lured by the love of the genii that move
In the depths of the purple sea;
Over the rills, and the crags, and the hills,
Over the lakes and the plains,
Wherever he dream, under mountain or stream,
The spirit he loves remains;
And I, all the while, bask in heaven's blue smile,
Whilst he is dissolving in rains.

The sanguine sunrise, with his meteor eyes,
And his burning plumes outspread,

Leaps on the back of my sailing rack,
 When the morning-star shines dead;
As on the jag of a mountain crag,
 Which an earthquake rocks and swings,
An eagle, alit, one moment may sit,
 In the light of its golden wings.
And when sunset may breathe, from the lit sea beneath,
 Its ardours of rest and love,
And the crimson pall of eve may fall
 From the depth of heaven above,
With wings folded I rest, on mine airy nest,
 As still as a brooding dove.

That orbèd maiden, with white fire laden,
 Whom mortals call the moon,
Glides glimmering o'er my fleece-like floor,
 By the midnight breezes strewn;
And wherever the beat of her unseen feet,
 Which only the angels hear,
May have broken the woof of my tent's thin roof,
 The stars peep behind her and peer!
And I laugh to see them whirl and flee,
 Like a swarm of golden bees,
When I widen the rent in my wind-built tent,
 Till the calm rivers, lakes, and seas,
Like strips of the sky fallen through me on high,
 Are each paved with the moon and these.

I bind the sun's throne with a burning zone,
 And the moon's with a girdle of pearl;
The volcanoes are dim, and the stars reel and swim.
 When the whirlwind my banners unfurl.
From cape to cape, with a bridge-like shape,
 Over a torrent sea,
Sun-beam proof, I hang like a roof,
 The mountains its columns be.

The triumphal arch through which I march
 With hurricane, fire, and snow,
When the powers of the air are chained to my chair.
 Is the million-coloured bow;
The sphere-fire above its soft colours wove,
 While the moist earth was laughing below.

I am the daughter of earth and water,
 And the nursling of the sky;
I pass through the pores of the ocean and shores;
 I change, but I cannot die.
For, after the rain, when, with never a stain,
 The pavilion of heaven is bare,
And the winds and sunbeams, with their convex
 gleams,
 Build up the blue dome of air,
I silently laugh at my own cenotaph,
 And out of the caverns of rain,
Like a child from the womb, like a ghost from the
 tomb,
I rise and upbuild it again.

SHELLEY.

THE EVENING CLOUD.

A CLOUD lay cradled near the setting sun;
 A gleam of crimson tinged its braided snow;
Long had I watched the glory moving on,
 O'er the still radiance of the lake below.
Tranquil its spirit seemed, and floated slow,—
 E'en in its very motion there was rest;
While every breath of eve that chanced to blow
 Wafted the trav'ler to the beauteous west:—
Emblem, methought, of the departed soul,
 To whose white robe the gleam of bliss is given;

And, by the breath of Mercy, made to roll
Right onward to the golden gates of heaven ;
Where, to the eye of faith, it peaceful lies,
And tells to man his glorious destinies.

WILSON.

"ABOVE THE CLOUDS."

IN our climate the level at which clouds are formed is ever changing ; but in the regions near the equator atmospheric phenomena assume a more regular character, under the influence of a vertical sun. These regions are, therefore, much more favourable than ours for astronomical observations. Amongst astronomers the desire to get "above the clouds" had long been a fond speculation. In 1856, an attempt was made, under the auspices of the British Government, to commence a series of observations in some elevated region, where the serene and quiet air would be specially favourable for viewing the heavenly bodies. The island of Teneriffe was selected for this purpose, as combining more of the required advantages than any other mountain within easy reach of Europe. The expedition was under the direction of Professor Piazzi Smyth, the distinguished astronomer at Edinburgh, who, in a remarkable and interesting work, has since published a narrative of the expedition. In an article contributed to a popular magazine he thus graphically describes the ascent of Teneriffe to a point high "above the clouds :"—

It was only a few days after—on a morning also cloudy, and with north-east cloud too—that the little party set forth from the town of Orotava, on the northern coast of Teneriffe, to climb the great mountain, and put to the only true test of actual practice their hopes of getting "above the clouds." Through long-winding stony pathways, between vineyards and cactus plantations, between orange groves and fig trees they proceeded, always ascending ; past gardens, and then past orchards, still ever ascending ; past corn fields and oat fields, ascending yet higher ; and then amongst

natural vegetation only, ferns and heath and some few wild laurels; and now, at a height of 3,000 feet vertical, they are close under the cloud. Before entering therein, let us pause for a moment and survey the beauties of creation in the region we are leaving behind. If, for that one purpose of severe astronomy, a position below the clouds is unsuitable, yet what an infinite amount of benefits for man to enjoy and beauty for him to contemplate, are connected therewith! Beneath the clouds are kindly rains and gentle dews; and these, assisted by a warm climate, encourage all those exquisite forms of vegetation we have admired clothing the lower slopes of the mountain. Without these, where were the fruits to support human life; where the buds and blossoms and fading flowers which teach us many a lesson useful to eternal life?

But duty now calls us on our upward way; and, before many more seconds are passed, first comes one cold hurrying blast, with mist upon its wings, and then another, and another, until, in the midst of a constant dense wet fog, all creation is shut out of our view, except the few feet of sloping earth on which we are treading, and they appear of a dull gray; and the occasional spiders' webs seen across our path are loaded with heavy drops of moisture.

For half an hour we must toil on and on through this winding-sheet of gloom; perpetually on the same upward rising way, but strong in hope and faith of what must in the end be presented to our eyes; on still, and up higher, when suddenly a momentary break appears overhead, and a portion of sky is seen,—oh, so blue! but it is lost again. In a few minutes, however, another opening, another blue patch is seen, and then another, and another; while before three minutes more are passed, all the hurrying clouds seem blown on one side; fair sky is everywhere above and around; a brilliant sun is shining; and there, there below us, is the upper surface of the clouds, extending far and wide, like a level plain, shutting out lowland and city and sea all from view, and in their place substituting brilliant reflections of solar light, which make the surface of this new mist-country look whiter than snow. Yes, indeed, we are now "above the clouds;" and

that view we have attempted to describe is the first example of the heightened, the advanced, the glorified appearance of even earth's sombre fog-banks to those who are privileged for a time to look on them from the heaven-ward side.

"Above the clouds," not only no rain, no mist, no dew, but a scorching sun, and an air both by day and by night dry to almost an alarming degree. The further we advance, and the higher we ascend, the drier becomes the air; while at the same time the strength of the north-east trade-wind is continually decreasing, and, at the height of about six or seven thousand feet, has completely died away. Not that it has ceased elsewhere as well, for the driving clouds below show that it is still in its accustomed violence there. The distant movements of those rollers of white cloud betray that it must yet be raging down there in all its strength, tearing the mist piecemeal, and bowing down the heads of suffering palm trees, and lashing the sea into foam-crested waves. Heaven grant that no cry of shipwrecked mariners be borne on the breeze; and, more still, that no evil thoughts be engendering in the cities of men.

It was when our party on the mountain were in the fullest enjoyment of their daily and nightly views of the heavens, that their friends in the towns of Teneriffe, near the sea-coast, wrote to them most sympathizingly:—"Oh! what dreadful weather you must have been suffering! Down here we have had for three weeks the most frightful continuance of storms; constant clouds, rain, and howling winds; and if that was the case with us, what must it not have been with you at the greater height!"

Yet, at the greater height, at that very time, the air was tranquil and serene, the sky clear, and bad weather entirely confined to that lower depth in the atmosphere, beneath "the grosser clouds."

Marvellous, indeed, and soul-inspiring, are the rewards which God, in his goodness, has allowed to be attained by those amongst men who diligently explore and read his book of works coincidently with his inestimable book of revealed words.

THE RAINBOW.

ALL transparent bodies have the power of decomposing the light which falls on them. A soap-bubble, for example, exhibits a beautiful play of colours on its surface; and so is it with that most beautiful of all the phenomena of the atmosphere, the rainbow. The drops of rain act as a prism, and separate the white light of the solar rays into the seven prismatic colours of which sunlight is composed, namely, violet, indigo, blue, green, orange, yellow, and red, the dark cloud behind the falling shower acting as a screen, on which the brilliant arch is made visible to the spectator.

TRIUMPHAL arch that fill'st the sky

When storms prepare to part!

I ask not proud philosophy

To teach me what thou art:

Still seems, as to my childhood's sight,

A midway station given

For happy spirits to alight

Betwixt the earth and heaven.

Can all that optics teach unfold

Thy form to please me so,

As when I dreamt of gems and gold

Hid in thy radiant bow?

When science from Creation's face

Enchantment's veil withdraws,

What lovely visions yield their place

To cold material laws!

And yet, fair bow, no fabling dreams,

But words of the Most High,

Have told why first thy robe of beams

Was woven in the sky.

When o'er the green undeluged earth

Heaven's cov'nant thou didst shine,

How came the world's gray fathers forth
To watch thy sacred sign !

And when its yellow lustre smiled
O'er mountains yet untrod,
Each mother held aloft her child,
To bless the bow of God.

Methinks thy jubilee to keep,
The first-made anthem rang
On earth, delivered from the deep,
And the first poet sang.

Nor ever shall the Muse's eye
Unraptured greet thy beam :
Theme of primeval prophecy,
Be still the poet's theme !

The earth to thee her incense yields,
The lark thy welcome sings,
When, glitt'ring in the freshened fields,
The snowy mushroom springs.

How glorious is thy girdle cast
O'er mountain, tower, and town,
Or mirrored in the ocean vast,
A thousand fathoms down !

As fresh in yon horizon dark,
As young thy beauties seem,
As when the eagle from the ark
First sported in thy beam.

For, faithful to its sacred page,
Heaven still rebuilds thy span,
Nor lets the type grow pale with age
That first spoke peace to man.

CAMPBELL.

THE WATERS OF THE GLOBE.

WATER is one of the most widely diffused bodies in nature, about three-fourths of the surface of the globe being covered by it. The benevolence of the Creator is manifest in the wide diffusion of this element. It is indispensable to both the animal and the vegetable worlds. It serves invaluable purposes in the arts and manufactures; in the form of rivers, lakes, and seas, it becomes a medium of intercourse among the nations of the earth; and to the vast reservoir of water in the ocean we are indebted for the clouds, which carry moisture from the sea, and let it down upon the parched and thirsty earth in refreshing rain.

There is a river in the sky a hundred times larger than the Amazon or the Mississippi; and not only one, but many. These rivers come to us in the spring rains, the summer showers, the nightly dews, and the winter snows. The water which thus falls from the sky every year would cover the earth, if it were level like a field, to the depth of fully five feet.

All the waters of our mighty rivers and lakes were once clouds, and the clouds are but vapour lifted into the sky from the sea by the secret enginery of the sun; and the winds, by the flapping of their mighty wings, drive it over the land to the hills, and the mountains, and the thirsty fields; and there the clouds pour their blessings on the farms, and pastures, and orchards, and the dusty roads, and the wayside grass, bringing greenness and gladness everywhere.....

The sea is in the sparkling dew-drop, and it falls in the summer shower. It makes the grass grow, and the flowers unfold their gay banners—red, white, and blue. It ripens the peach and the apple, and loads the fields with the yellow harvest. It spins our thread and weaves our cloth. It is harnessed to mighty engines and does more work than thousands of men and horses. It saws our timber, lifts up our coal from the bowels of the earth, and steams in the iron horse. The sea clothes and cools us, and carries us and works for us. All the water in our rivers, lakes,

fountains, in the dew, fog, snow, sleet, and rain, comes alike from the sea.

From whatever source water is procured, whether from ocean, river, lake, or spring, it is always the same. It is true that water from the sea has a different taste from that of rain or river water; but the difference does not lie in the water, but in the substances dissolved in it.

Water is composed of two gases, oxygen and hydrogen, in the proportion of eight parts of oxygen to one of hydrogen. It is one of the most marvellous facts in the natural world, that though hydrogen is highly inflammable, and oxygen is a supporter of combustion, both combined form an element destructive to fire.

Pure water is destitute of colour, taste, and smell. It seldom, however, occurs in this state, but usually contains various ingredients, derived either from the atmosphere or from the earth. Rain water is the purest that can be obtained, except by distillation.

The waters of the globe are divided into fresh and salt. The fresh water includes all streams and rivers, and nearly all the springs and the greater number of the lakes, on the earth's surface. They are called fresh, because they contain no amount of saline matter unfitting them for use. It is supposed that the lakes of North America contain more than half of all the fresh water on the face of the globe.

Salt water is that which fills the vast basin of the ocean, besides numerous lakes and springs. It forms by far the larger portion of the liquid element. The proportion of saline matter which the ocean contains is about three and a half per cent. Supposing the sea to have a mean depth of one thousand feet, it has been calculated that the amount of common salt it contains is equal to five times the mass of the Alps, or about a third less than that of the Himalaya Mountains.

Near the equator and towards the poles the ocean is less salt than in other parts. This is probably owing to the abundant rains at the equator, and to the melting of the ice in the polar regions.

The saline ingredients render sea water much heavier than fresh water, and, consequently, better adapted for navigation. Fresh water freezes at the temperature of 32° ; salt water, at the temperature of $28\frac{1}{2}^{\circ}$. The healthfulness of the ocean is partly ascribed to its constant motion, which prevents its waters from becoming stagnant and corrupt.

THE OCEAN.

Who ever gazed upon the broad sea without emotion? Whether seen in stern majesty, hoary with the tempest, rolling its giant waves upon the rocks, and dashing with resistless fury some gallant bark on an iron-bound coast; or sleeping beneath the silver moon, its broad bosom broken but by a gentle ripple, just enough to reflect a long line of light—a path of gold upon a pavement of sapphire;—who has looked upon the sea without feeling that it has power “to stir the soul with thoughts profound?”

Perhaps there is no earthly object—not even the cloud-cleaving mountains of an alpine country—so sublime as the sea in its severe and naked simplicity. Standing on some promontory whence the eye roams far out upon the unbounded ocean, the soul expands, and we conceive a nobler idea of the majesty of that God who “holdeth the waters in the hollow of his hand.” He has set bars and doors, and said, “Hitherto shalt thou come, but no further, and here shall thy proud waves be stayed.”—*Gosse*.

Roll on, thou deep and dark-blue ocean—roll!
Ten thousand fleets sweep over thee in vain:
Man marks the earth with ruin—his control
Stops with the shore;—upon the watery plain
The wrecks are all thy deed, nor doth remain
A shadow of man’s ravage, save his own,
When, for a moment, like a drop of rain,
He sinks into thy depths, with bubbling groan,
Without a grave, unknelled, uncoffined, and unknown.

The armaments which thunder-strike the walls
 Of rock-built cities, bidding nations quake,
 And monarchs tremble in their capitals ;
 The oak leviathans, whose huge ribs make
 Their clay creator the vain title take
 Of lord of thee, and arbiter of war ;—

These are thy toys, and, as the snowy flake,
 They melt into thy yeast of waves, which near
 Alike the Armada's pride, or spoils of Trafalgar.

Thy shores are empires, changed in all save thee.
 Assyria, Greece, Rome, Carthage—what are they ?
 Thy waters wasted them while they were free,
 And many a tyrant since : their shores obey
 The stranger, slave, or savage : their decay
 Has dried up realms to deserts. Not so thou :
 Unchangeable save to thy wild waves' play,
 Time writes no wrinkle on thine azure brow—
 Such as Creation's dawn beheld, thou rollest now.

Thou glorious mirror, where the Almighty's form
 Glasses itself in tempests ; in all time—
 Calm or convulsed—in breeze, or gale, or storm,
 Icing the pole, or in the torrid clime
 Dark-heaving,—boundless, endless, and sublime—
 The image of Eternity !

BYRON

THE TREASURES OF THE DEEP.

WHAT hidest thou in thy treasure-caves and cells.
 Thou hollow-sounding and mysterious main ?—
 Pale glistening pearls, and rainbow-coloured shells,
 Bright things which gleam unrecked of, and in vain.—
 Keep, keep thy riches, melancholy sea !
 We ask not such from thee.

Yet more, the depths have more! What wealth untold,
Far down, and shining through their stillness lies!
Thou hast the starry gems, the burning gold,
Won from ten thousand royal argosies.—
Sweep o'er thy spoils, thou wild and wrathful main!
Earth claims not these again!

Yet more, the depths have more! Thy waves have rolled
Above the cities of a world gone by!
Sand hath filled up the palaces of old,
Sea-weed o'ergrown the halls of revelry!—
Dash o'er them, ocean, in thy scornful play!
Man yields them to decay!

Yet more, the billows and the depths have more!
High hearts and brave are gathered to thy breast!
They hear not now the booming waters roar;
The battle-thunders will not break their rest!—
Keep thy red gold and gems, thou stormy grave!
Give back the true and brave!

Give back the lost and lovely! those for whom
The place was kept at board and hearth so long,
The prayer went up through midnight's breathless gloom,
And the vain yearning woke 'midst festal song!
Held fast thy buried isles, thy towers o'erthrown—
But all is not thine own!

To thee the love of woman hath gone down,
Dark flow thy tides o'er manhood's noble head,
O'er youth's bright locks and beauty's flowery crown;
Yet must thou hear a voice—Restore the dead!
Earth shall reclaim her precious things from thee!
Restore the dead, thou sea!

MRS. HEMANS.

THE CRUST OF THE EARTH.

THE various substances which constitute the earth may be divided into *simple* and *compound*. A simple substance, or element, is one which cannot be separated into other component parts. A compound substance is formed by the combination of two or more simple substances or elements.

The entire number of elements yet discovered is sixty-one, of which only fourteen are found in nature in a pure state, and these occur rarely, and in very limited quantities. Gold, silver, and copper, are elements generally found combined with other substances, but frequently discovered in a pure, unmixed state. Granite and limestone are compound substances.

Nearly all the matter of the globe is composed of different combinations of eighteen of these elements; and *no matter* pertaining to the earth, no part of the land or water, no particle of air, no plant or animal, has yet been discovered, which, on being submitted to the analysis of the chemist, is not found to be composed of one or more of the sixty-one elements already mentioned.

On and immediately below the surface of the land will be found, generally speaking, loose or unconsolidated materials, which are called *earths*. The first in order, usually occupying the immediate surface, is composed principally of decayed vegetable and animal substances, and is called *vegetable mould*.

The other earths are composed principally of particles which have been worn off, by the atmosphere, the winds, and the rain, from the solid rocks which form the crust of the earth. These are called mineral earths; and bear the names respectively of the minerals which enter most largely into their composition. Thus, when earths are composed principally of *silex*, or flint, they are called silicious earths (sand is an example); when of *calx*, or lime, calcareous earths; and when of *argilla*, or clay, argillaceous earths.

If there were only silicious earth there could be no vegetation,

for it is too porous to retain the moisture. Sandy deserts are examples of tracts of land composed almost wholly of silicious earth. Calcareous earth is too dry and hot for vegetation, and argillaceous earth is too wet and cold. When these earths, however, are mixed together in due proportions, they correct and improve each other, and form the fertile soil of our gardens and fields. Sand corrects the stiffness of clayey land, and lime adds to its warmth.

Without sand, no glass could be made; nor could houses of brick or stone be built, for sand is a necessary ingredient in mortar. Without clay, we should have no springs; for beds of clay, or clayey rocks, alone arrest the downward progress of the water which falls in rain, thus forming the reservoirs from which springs flow.

The wearing away of solid rocks, by the influences already enumerated, is not confined exclusively to the particles which form mineral earths. Large fragments are frequently broken off, from which are formed the gravel, pebbles, and rounded stones that are seen on the sea-shore, and in the beds of rivers. At first, these fragments are rough, but when subjected to the rolling of waves on the beach, or to the action of running water in rivers, by rubbing against each other they become smooth and rounded.

After digging through the different earths which lie at the surface, we come to hard or consolidated materials, which are called *rocks*. These rocks form what is called "the crust of the earth;" and, generally speaking, they are of the same materials as the earths we have just described: the only difference being, that in the earths the materials are loose, or unconsolidated; and in the rocks, hard, or consolidated.

Popularly, the term "rock" is applied only to the more compact and solid portions of the globe; but geologically it extends to every formation,—to the loose sands, gravels, and clays, as well as to the limestones and granites.

Our positive knowledge of the formations constituting the interior of the earth is very limited, the labours of the miner having

extended to but comparatively a short way below the surface of the earth, and scarcely two thousand feet below the level of the sea.

All rocks may be classified,—

1. As Stratified, or Unstratified;
2. As Fossiliferous, or Non-fossiliferous;
3. As Igneous, Metamorphic, or Aqueous..

Stratified rocks are found in the regular form of beds or layers, varying in depth from the thickness of a sheet of paper to many feet. These beds are sometimes arranged horizontally, but oftener inclined at various angles to the horizon. This class of rocks is estimated to occupy about nine-tenths of the land surface of the earth, and to have an average depth of eight or ten miles.

Unstratified rocks are irregular masses, the lowest of all rocks, forming the basis or bed on which the others rest. But while they thus form this basis or bed, they are frequently pressed up through the stratified rocks, constituting in many places the summits of lofty mountains. They do not, probably, occupy more than one-tenth part of the earth's surface; but we have reason to suppose they constitute the internal parts of the globe to a great depth.

Fossiliferous rocks contain, in a petrified state, the remains of plants and animals, sometimes in very small, but often in enormous quantities. The fossiliferous rocks are stratified. Some of the non-fossiliferous rocks are stratified—some are unstratified.

It is estimated that two-thirds of the surface of the existing continents are composed of fossiliferous rocks, and they are often several thousand feet in thickness. The quantity of microscopic shells discovered by the great Prussian naturalist, M. Ehrenberg, in rocks of this formation, is most wonderful. Shells not larger than a grain of sand form entire mountains! In one place in Germany he discovered a bed fourteen feet thick, made up of the shells of minute animals, so small that he esti-

mated that forty millions of them would be required to form a cubic inch.

The quantity of fossil remains is so great, that with the exception of the metals, and some of the older rocks, probably not a particle of matter exists on the surface of the earth that has not at some time formed part of a living creature.

Igneous rocks, or those which are supposed to owe their origin to fire, are subdivided into Plutonic and Volcanic rocks. They are unstratified and non-fossiliferous.

Plutonic rocks, it is supposed, were formed of melted matter, cooled and consolidated at a great depth, and under an enormous pressure, and then thrown up by the elastic force of internal heat. Volcanic rocks are the products of ancient volcanic eruptions.

Granite and its varieties constitute the principal Plutonic rocks. Basalts and greenstone are among the principal volcanic rocks. From their frequent arrangement in the form of steps, they are often called "trap rocks," from the Swedish *trappa*, "a stair." Fingal's Cave and the Giant's Causeway are familiar examples.

The theory of the igneous formation of rocks, of which we have positive proof by observation in the case of volcanic rocks, presupposes the earth to have been originally in a melted state, and that its centre now, excluding a crust only from twenty to fifty miles in thickness, is a sea of fire. Additional evidence of this is found in the fact that the temperature of the earth regularly increases one degree for every fifty-four feet of descent beneath its surface. At this rate of increase, a heat sufficient to melt all known rocks would be reached at a depth of between forty and fifty miles.

Metamorphic rocks are supposed to have been formed in regular beds or layers, of the sediment of water, but having been deposited near the place where Plutonic rocks were generated, their character has been changed by the immense heat, and they have become as highly crystallized as granite itself, without losing their regular form. They are stratified, and non-fossiliferous.

Gneiss is a metamorphic rock. It so nearly resembles granite, as hardly to be distinguishable from it even by a practised eye.

Aqueous rocks seem to have been formed by the gradual deposit of sedimentary matter in water, which has become more or less hardened into solid rocks. They are stratified and fossiliferous.

Aqueous rocks are variously subdivided by different geologists, with reference to their age, and the depth at which they are found from the surface, into numerous groups and orders. Groups found at the greatest depth, and containing the remains of the earliest formed animals, are regarded as the oldest; those containing the remains of animals similar to those now living, are deemed to be of the most recent formation. Aqueous rocks constitute by far the greatest portion of the exposed crust of the earth. The various kinds of soils, gravels, sands, clays, limestone, coal, sandstone, and some slates, are the principal rocks of this class.

All stratified rocks maintain a regular order of succession; that is, if an older rock is at the surface, we may be assured none of later formation is underneath it. Thus, no geologist would expect to find beds of coal underneath strata of talcose slate, the latter being an older formation; yet this slate has been bored into, at great labour and with much expense, in search for coal.

The crust of the earth is undergoing incessant change. The atmosphere, the ocean, and rivers, are agents constantly acting upon the land, and removing its particles into the sea; while, as if to compensate for this gradual wearing away of the land, at intervals of time volcanic eruptions elevate enormous masses of matter, sometimes forming new islands in the midst of the ocean. Yet these changes are trivial, compared with those which geology teaches us must have taken place to fit the earth for the abode of man.

ACTION OF CLIMATE UPON MAN.

SINCE man is made to acquire the full possession and mastery of his faculties by toil, and by the exercise of all his energies, no climate could so well minister to his progress in this work as the climate of the temperate regions.

Excessive heat enfeebles man; it invites to repose and inaction. In the tropical regions the power of life in nature is carried to its highest degree; thus, with the tropical man, the life of the body overmasters that of the soul; the physical instincts of our nature eclipse those of the higher faculties; passion predominates over intellect and reason; the passive faculties over the active faculties. A Nature too rich, too prodigal of her gifts, does not compel man to wrest from her his daily bread by his daily toil. A regular climate, and the absence of a dormant season, render forethought of little use to him. Nothing invites him to that struggle of intelligence against Nature which raises the powers of man to their highest pitch. Thus, he never dreams of resisting physical Nature; he is conquered by her; he submits to the yoke, and becomes again the animal man, in proportion as he abandons himself to external influences, forgetful of his high moral destination.

In the temperate climates all is activity and movement. The alternations of heat and cold, the changes of the seasons, a fresher and more bracing air, incite man to a constant struggle, to forethought, and to the vigorous employment of all his faculties. A more economical Nature yields nothing, except to the sweat of his brow; every gift on her part is a recompense for effort on his. Nature here, even while challenging man to the conflict, gives him the hope of victory; and, if she does not show herself prodigal, she grants to his active and intelligent labour more than his necessities require; while she calls out his energy, she thus gives him ease and leisure, which permit him to cultivate all the lofty faculties of his higher nature. Here, physical Nature is not a tyrant, but a useful helper; the active faculties, the understanding

and the reason, rule over the instincts and the passive faculties ; the soul over the body ; man over nature.

In the frozen regions man also contends with Nature, but it is with a niggardly and severe Nature ; it is a desperate struggle—a struggle for life. With difficulty, by force of toil, he succeeds in providing for himself a miserable support, which saves him from dying of hunger and hardship during the tedious winters of that climate. High culture is not possible under such unfavourable conditions.

The man of the tropical regions is the son of a wealthy house. In the midst of the abundance which surrounds him, labour too often seems to him useless ; to abandon himself to his inclinations is more easy and agreeable. A slave of his passions, an unfaithful servant, he leaves uncultivated and unused the faculties with which God has endowed him.

The man of the polar regions is the beggar overwhelmed with suffering, who, too happy if he can but gain his daily bread, has no leisure to think of anything more exalted.

The man of the temperate regions, finally, is the man born in ease, in the golden mean, which is the most favoured of all conditions. Invited to labour by everything around him, he soon finds, in the exercise of all his faculties, at once progress and well-being.

Thus, if the tropical regions have the wealth of nature, the temperate regions are the most perfectly organized for the development of man. They are opposed to each other, as the body and the soul, as the inferior races and the superior races, as savage man and civilized man, as nature and history. Of this contrast, so marked as it is, the history of human societies will give us the solution, or, at least, will enable us to obtain a glimpse of the truth.

GUYOT.

HYMN TO THE CREATOR.

THESE are thy glorious works, Parent of good !
Almighty ! Thine this universal frame,
Thus wondrous fair ; thyself how wondrous then !
Unspeakable ! who sitt'st above these heavens,
To us invisible, or dimly seen
In these thy lowest works ; yet these declare
Thy goodness beyond thought, and power divine.

Speak, ye who best can tell, ye sons of light,
Angels ! for ye behold him, and with songs
And choral symphonies, day without night,
Circle his throne rejoicing :—ye in heaven ;
On earth join all ye creatures to extol
Him first, him last, him midst, and without end !

Fairest of stars ! last in the train of night,
If better thou belong not to the dawn,—
Sure pledge of day, that crown'st the smiling morn
With thy bright circlet,—praise him in thy sphere,
While day arises, that sweet hour of prime.

Thou sun ! of this great world both eye and soul,
Acknowledge him thy greater ; sound his praise
In thy eternal course, both when thou climb'st,
And when high noon hast gained, and when thou fall'st

Moon ! that now meet'st the orient sun, now fliest,
With the fixed stars,—fixed in their orb that flies ;
And ye five other wand'ring fires ! that move
In mystic dance, not without song, resound
His praise, who out of darkness called up light.

Air, and ye elements ! the eldest birth
Of Nature's womb, that in quaternion run
Perpetual circle, multiform, and mix
And nourish all things ; let your ceaseless change
Vary to our great Maker still new praise.

Ye mists and exhalations ! that now rise

From hill or steaming lake, dusky or gray,
 Till the sun paint your fleecy skirts with gold,
 In honour to the world's great Author rise;
 Whether to deck with clouds the uncoloured sky,
 Or wet the thirsty earth with falling showers,
 Rising or falling still advance his praise.

His praise, ye winds! that from four quarters blow,
 Breathe soft or loud; and wave your tops, ye pines,
 With every plant, in sign of worship, wave.

Fountains! and ye that warble, as ye flow,
 Melodious murmurs, warbling tune his praise.

Join voices, all ye living souls! Ye birds,
 That singing up to heaven-gate ascend,
 Bear on your wings and in your notes his praise.

Ye that in waters glide, and ye that walk
 The earth, and stately tread, or lowly creep!
 Witness if I be silent, morn or even,
 To hill or valley, fountain or fresh shade,
 Made vocal by my song, and taught his praise.

Hail, universal Lord! be bounteous still
 To give us only good; and if the night
 Hath gathered aught of evil, or conceal'd,
 Disperse it, as now light dispels the dark!

MITTON.

HEAVEN TRANSCENDENTLY GLORIOUS.

I PRAISED the earth, in beauty seen,
 With garlands gay of various green;
 I praised the sea, whose ample field
 Shone glorious as a silver shield;
 And earth and ocean seemed to say,
 "Our beauties are but for a day."

I praised the sun, whose chariot rolled
 On wheels of amber and of gold;

I praised the moon, whose softer eye
Gleamed sweetly through the summer sky;
And moon and sun in answer said,
"Our days of light are numberèd."

O God, O good beyond compare!
If thus thy meaner works are fair,—
If thus thy bounties gild the span
Of ruined earth and sinful man,—
How glorious must the mansion be
Where thy redeemed shall dwell with Thee!

PART II.

THE LAND WE LIVE IN.

OLD ENGLAND.

OLD England! thou hast green and pastoral hills,
(Fanned by delicious gales;
And living voices of harmonious rills
Sound in thy sylvan vales.

Under the shadow of primeval trees,
'Mid whisp'ring of green leaves,
Stand cheerful groups of white-walled cottages,
Flower-mantled to the eaves.

And thou hast loving hearts, both high and low,
And homes where bliss abides;
And little children that rejoicing go
By flowery streamlet sides.

And thou hast many a hill and forest glade,
That to the past belong;
Many a brown moor and crumbling ruin, made
Imperishable by song;

And way-side wells, that broad leaves overshadow,
Where pilgrims knelt of old;
And winding paths through many a pleasant meadow,
'Mid flowers of blue and gold,—

Winding through woods where the sweet wilding's blossom
Puts forth in early spring,

And nodding blue-bells clothe the steep hill's bosom,
And fearless blackbirds sing.

And thou hast Sabbath-bells in old church towers,
Whose music thrills the air;
And the sweet calm of Sabbath sunset hours,
(When every thought is prayer.)

And thou hast grassy graves set side by side,—
(The high-born and the lowly)
By common griefs, by common death allied,
In ground [that tears make holy] *saered*

Graves, Sabbath worship, village homes, and men,
Old England, these are thine;
And spots made famous by the sword and pen,
Till each ~~one~~ is a shrine; .

And cities of old feudal date and pride;
(And halls of dark renown,
Where kings and kingly prelates lived and died; *recen-*
And many a modern town.

O glory-crowned England! thou hast these,
Hast these, and still hast more,—
The empire of the tributary seas,
That lave thine island shore.

And wherefore is the tributary sea
As a liege subject given?—
To bear forth knowledge, truth, and liberty
To each land under heaven;—

To knit thee to all people; everywhere
To make thy knowledge known;
To make thine influence, like God's common air,
Extend from zone to zone!

MARY HOWITT.

THE GLORY OF GREAT BRITAIN.

HAPPY Britannia! where the Queen of Arts,
 Inspiring vigour, Liberty abroad
 Walks, unconfined, even to thy furthest cots,
 And scatters plenty with unsparing hand;
 Rich is thy soil, and merciful thy clime;
 Thy streams unfailing in the summer's drought;
 Unmatched thy guardian oaks; thy valleys float
 With golden waves; and on thy mountains flocks
 Bleat numberless; while, roving round their sides,
 Bellow the blackening herds in lusty droves.
 Beneath, thy meadows glow, and rise unequalled
 Against the mower's scythe, On every hand
 Thy villas shine, Thy country teems with wealth:
 And property assures it to the swain, *thou*
 Pleased and unwearied in his guarded toil,
 Full are thy cities with the sons of art;
 And trade and joy, in every busy street,
 Mingling are heard: even Drudgery himself,
 As, at the car he sweats, or dusty hews
 The palace stone, looks gay. Thy crowded ports,
 Where rising masts an endless prospect yield,
 With labour burn, and echo to the shouts
 Of hurried sailor, as he hearty waves
 His last adieu, and, loosening every sheet,
 Resigns the spreading vessel to the wind.
 Bold, firm, and graceful, are thy generous youth
 By hardship sinewed, and by danger fired,
 Scattering the nations where they go; and first
 Or on the listed plain, or stormy seas.
 Mild are thy glories, too, as o'er the plans
 Of thriving peace, thy thoughtful sires preside;
 In genius and substantial learning high;
 For every virtue, every worth, renowned:
 Sincere, plain-hearted, hospitable, kind;

(Yet, like the mustering thunder, when provoked,
The dread of tyrants, and the sole resource
Of those that under grim oppression groan.)

Thy Sons of Glory many! (Alfred thine,
In whom the splendour of heroic war,
And more heroic peace, when governed well,
Combine; whose hallowed name the Virtues saint,
And his own Muses love;) the best of kings!
With him thy Edwards and thy Henrys shine,—
Names dear to Fame; (the first who deep impressed
On haughty Gaul the terror of thy arms,
That awes her genius still, In Statesmen thou,
And Patriots, fertile. (Thine a steady More,
Who, with a generous though mistaken zeal,
Withstood a brutal tyrant's useful rage;
Like Cato firm, like Aristides just,
Like rigid Cincinnatus nobly poor,—

A dauntless soul erect, who smiled on death,

Frugal, and wise, a Walsingham is thine;
A Drake, who made thee mistress of the deep,
And bore thy name in thunder round the world.
Then flamed thy spirit high: but who can speak
The numerous worthies of the Maiden Reign?)

In Raleigh mark their ev'ry glory mixed;
Raleigh, the scourge of Spain! whose breast with all
The sage, the patriot, and the hero burned;
Nor sunk his vigour when a coward-reign
The warrior fettered, and at last resigned,
To glut the vengeance of a vanquished foe.
Then, active still and unrestrained, his mind
Explored the vast extent of ages past,
And with his prison-hours enriched the world;
Yet found no times, in all the long research,
So glorious, or so base, as those he proved,
In which he conquered, and in which he bled.)

Nor can the Muse the gallant Sidney pass,

The plume of war! (with early laurels crowned,)
 The lover's myrtle and the poet's bay;
 A Hampden too is thine, illustrious land!
 Wise, strenuous, firm, of unsubmitting soul.
 Bring every sweetest flower, and let me strew
 The grave where Russell lies; whose tempered blood,
 With calmest cheerfulness for thee resigned,
 Stained the sad annals of a giddy reign,
 (Aiming at lawless power, though meanly sunk
 In loose, inglorious luxury,) (With him
 His friend, the British Cassius,* fearless bled;
 Of high determined spirit, roughly brave,
 By ancient learning to the enlightened love
 Of ancient freedom warmed.) Fair thy renown
 In awful Sages and in noble Bards;
 Soon as the light of dawning Science spread
 Her orient ray, and waked the Muses' song.
 Thine is a Bacon: him for studious shade
 Kind Nature formed, deep, comprehensive, clear,
 Exact, and elegant,—in one rich soul,
 Plato, the Stagyrite, and Tully joined.
 (The great deliverer he! who, from the gloom
 Of cloistered monks and jargon-teaching schools,
 Led forth the true Philosophy, there long
 Held in the magic chain of words and forms,
 And definitions void;) he led her forth,
Daughter of Heaven! that slow-ascending still,
 Investigating sure the chain of things,
 With radiant finger points to Heaven again.)
 Why need I name thy Boyle, whose pious search
 Amid the dark recesses of His works,
 The great Creator sought? And why thy Locke,
 Who made the whole internal world his own?
 Let Newton, pure intelligence! whom God
 To mortals lent to trace His boundless works;

* Algernon Sidney.

From laws sublimely simple, speak thy fame
 In all philosophy. For lofty sense,
Creative fancy, and inspection keen
 Through the deep windings of the human heart,
 Is not wild Shakspeare thine and Nature's boast?
 Is not each great, each amiable Muse
 Of classic ages, in thy Milton met?—
 A genius universal as his theme—
 Astonishing as chaos—as the bloom
 Of blowing Eden fair—as heaven sublime!

Nor shall my verse that elder bard forget,
 The gentle Spenser, Fancy's pleasing son; *gentle disposition*
 Who, like a copious river, poured his song
 O'er all the mazes of enchanted ground:
 Nor thee, his ancient master, laughing sage,
 Chaucer, whose native manners-painting verse, *insurance of*
 Well moralized, shines through the Gothic cloud *middle ages*.
 Of time and language o'er thy genius thrown. THOMSON.

THE PATRIOT'S PRAYER FOR ENGLAND.

ISLAND of bliss! amid the subject seas
 That thunder round thy rocky coasts set up;
 At once the wonder, terror, and delight
 Of distant nations, whose remotest shore
 Can soon be shaken by thy naval arms;
 Not to be shook thyself, but all assaults
 Baffling, like thy hoar cliffs the loud sea-wave!
 O Thou! by whose almighty nod the scale
 Of empire rises, or alternate falls,
 Send forth the saving Virtues round the land,
 In bright patrol;—white Peace and social Love,—
 The tender-looking Charity, intent
 On gentle deeds, and shedding tears through smiles;
 Undaunted Truth, and Dignity of mind;
 Courage, composed and keen; sound Temperance,
 Healthful in heart and look; clear Chastity,

With blushes reddening as she moves along,
 Disordered at the deep regard she draws;
 Rough Industry; Activity untired,
 With copious life informed, and all awake;
 While in the radiant front superior shines
 That first paternal virtue, Public Zeal—
 (Who throws o'er all an equal wide survey,)
 And, ever musing on the common weal,
 Still labours glorious with some great design.

THOMSON.

THE WONDERS OF CIVILIZATION.

THE condition of the present inhabitants of this country is very different from that of their forefathers. These, generally divided into small states or societies, had few relations of amity with surrounding tribes, and their thoughts and interests were confined very much within their own little territories and rude habits. Now, however, every one sees himself a member of one vast civilized society which covers the face of the earth, and no part of the earth is indifferent to him. In England, a man of small fortune (may cast his regards around him, and say, with truth and exultation—"I am lodged in a house that affords me conveniences and comforts which even a king could not command some centuries ago. There are ships crossing the seas in every direction, to bring what is useful to me from all parts of the earth. In China, men are gathering the tea-leaf for me; in America, they are planting cotton for me; in the West India islands, they are preparing my sugar and my coffee; in Italy, they are feeding silk-worms for me; in Saxony, they are shearing the sheep to make me clothing; at home, powerful steam-engines are spinning and weaving for me, and making cutlery for me, and pumping the mines that minerals useful to me may be procured. My patrimony was small, yet I have carriages running day and night on all the roads, to carry my correspondence; I have roads, and canals, and bridges, to bear the coal for my winter fire; nay, I have protecting fleets and armies around my happy country, to secure my enjoyments and repose. Then I have editors and printers,

may look
joyfully.rearing
slippery

digging

moreover

claim

who daily send me an account of what is going on throughout the *discription* world, among all these people who serve me; and in a corner of my house I have *books*, the miracle of all my possessions—more wonderful than the wishing-cap of the Arabian tales, for they transport me instantly, not only to all places, but to all times. (By my books *immediately* I can conjure up before me, to vivid existence, all the great and good men of antiquity ;) and, for my individual satisfaction, I can make *personal* them, act over again, the most renowned of their exploits : the orators declaim for me; the historians recite ; the poets sing ;—in a word, from the equator to the pole, and from the beginning of time until now, by my books I can be where I please.”—This picture is not overcharged, and might be much extended—such being the *interested* miracle of God’s goodness in providence, that each individual of the civilized millions that cover the earth may have nearly the same enjoyments as if he were the single lord of all.

ARNOTT.

COMMERCE.

THE band of Commerce was designed
To associate all the branches of mankind ;
And, if a boundless plenty be the robe,
Trade is the golden girdle of the globe,)
Wise to promote whatever end He means,
God opens fruitful Nature’s various scenes : *causes*
Each climate needs what other climes produce,
And offers something to the general use;
No land but listens to the common call,
And in return receives supply from all.
(This genial intercourse, and mutual aid,
Cheers what were else a universal shade ; *miserable*
Calls Nature from her ivy-mantled den, *a creeping plant*
And softens human rock-work into men,)
Ingenious Art, with her expressive face,
Steps forth to fashion and refine the race;
(Not only fills Necessity’s demand,)
But overcharges her capacious hand :)

(Capricious taste itself can crave no more
 Than she supplies from her abounding store;
 She strikes out all that luxury can ask,
 And gains new vigour at her endless task.)
 Hers is the spacious arch, the shapely spire, *turnet*
 The painter's pencil, and the poet's lyre;
 From her the canvas borrows light and shade,
 And verse, more lasting, hues that never fade, *(enduring)*
 She guides the finger o'er the dancing keys, *none*.
 Gives difficulty all the grace of ease; *requir'd not what you*
 And pours a torrent of sweet notes around,
 Fast as the thirsting ear can drink the sound.

These are the gifts of Art; and Art thrives most
 Where Commerce has enriched the busy coast;
 He catches all improvements in his flight;
 Spreads foreign wonders in his country's sight;
 Imports what others have invented well,
 And stirs his own to match them, or excel.
 'Tis thus, reciprocating each with each,
 Alternately the nations learn and teach;
 While Providence enjoins to every soul
 A union with the vast terraqeous whole.
 (Heaven speed the canvas, gallantly unfurled, *ships*
 To furnish and accommodate a world;
 To give the pole the produce of the sun, *series*
 And knit the unsocial climates into one!
 Soft airs and gentle heavings of the wave!
 Impel the fleet, whose errand is to save, — *ships*
 To succour wasted regions, and replace
 The smile of opulence in Sorrow's face.)
 Let nothing adverse, nothing unforeseen,
 Impede the bark that ploughs the deep serene,
 Charged with a freight transcending in its worth
 The gems of India, Nature's rarest birth;
 That flies, like Gabriel on his Lord's commands, *hastens away*.
 A herald of God's love to pagan lands, *with spirit* COWPER.
proclaimers of divine goodness.

THE ORIGIN OF THE ENGLISH NATION.

THE great-grandsons of those who had fought under William, and the great-grandsons of those who had fought under Harold, began to draw near to each other in friendship; and the first pledge of their reconciliation, was the Great Charter, won by their united exertions, and framed for their common benefit. Here commences the history of the English nation. The history of the preceding events is the history of wrongs inflicted and sustained by various tribes, which, indeed, all dwelt on English ground, but which regarded each other with aversion such as has scarcely ever existed between communities separated by physical barriers. For even the mutual animosity of countries at war with each other is languid when compared with the animosity of nations which, morally separated, are yet locally intermingled. (In no country has the enmity of race been carried further than in England. In no country has that enmity been more completely effaced. The stages of the process by which the hostile elements were melted down into one homogeneous mass are not accurately known to us. But it is certain that, when John became king, the distinction between Saxons and Normans was strongly marked, and that *visible* before the end of the reign of his grandson it had almost disappeared. In the time of Richard I., the ordinary imprecation of a Norman gentleman was, "May I become an Englishman!" His ordinary form of indignant denial was, "Do you take me for an Englishman?" The descendant of such a gentleman a hundred years later, was proud of the English name, The sources of the noblest rivers which spread fertility over continents, and bear richly laden fleets, to the sea, are to be sought in wild and barren mountain tracts, incorrectly laid down in maps, and rarely explored by travellers. To such a tract the history of our country during the thirteenth century *period* may not inaptly be compared.) Sterile and obscure as is that portion of our annals, it is there that we must *look* seek for the origin of our freedom, our prosperity, and our glory. Then it was that the great English people was formed; that the

freely study
 national character began to exhibit those peculiarities which it has ever since retained; and that our fathers became emphatically islanders,—islanders not merely in geographical position, but in their politics, their feelings, and their manners. Then first appeared with distinctness that constitution which has ever since, through all changes, preserved its identity; that constitution of which all the other free constitutions in the world are copies, and which, in spite of some defects, deserves to be regarded as the best under which any great society has ever yet existed during many ages. Then it was that the House of Commons, the archetype of all the representative assemblies which now meet either in the Old or in the New World, held its first sittings. (Then it was that the common law rose to the dignity of a science, and rapidly became a not unworthy rival of the imperial jurisprudence.) Then it was that the courage of those sailors who manned the rude barks of the Cinque Ports first made the flag of England terrible on the seas. Then it was that the most ancient colleges which still exist at both the great national seats of learning were founded. Then was formed that language, less musical, indeed, than the languages of the south, but in force, in richness, in aptitude for all the *exactly* highest purposes of the poet, the philosopher, and the orator, inferior to the tongue of Greece alone. Then, too, appeared the first dawn of that noble literature, the most splendid and the most durable of the many glories of England.

MACAULAY.

THE PROGRESS OF ENGLAND.

Norman
 THE history of England is emphatically the history of progress. It is the history of a constant movement in the public mind, of a constant change in the institutions of a great society. We see that society, at the beginning of the twelfth century, in a state more miserable than the state in which the most degraded nations of the East now are. We see it subjected to the tyranny of a handful of armed foreigners. We see a strong distinction of caste separating the victorious Norman from the vanquished Saxon.

We see the great body of the population in a state of personal slavery. We see the most debasing and cruel superstition exercising boundless dominion over the most elevated and benevolent minds. We see the multitude sunk in brutal ignorance, and the studious few engaged in acquiring what did not deserve the name of knowledge. In the course of seven centuries the wretched and degraded race have become the greatest and most highly civilized people that ever the world saw—have spread their dominion over every quarter of the globe—have scattered the seeds of mighty empires and republics, over vast continents, of which no dim *clear* intimation had ever reached Ptolemy or Strabo—have created a *new* maritime power which would annihilate in a quarter of an hour *naval* the navies of Tyre, Athens, Carthage, Venice, and Genoa together—have carried the science of healing, the means of locomotion, *machines* and correspondence, every mechanical art, every manufacture, everything that promotes the convenience of life, to a perfection which our ancestors would have thought magical—have produced a literature which may boast of works not inferior to the noblest which Greece has bequeathed to us—have discovered the laws *left* which regulate the motions of the heavenly bodies—have speculated with exquisite subtilty on the operations of the human *great powers* mind—have been the acknowledged leaders of the human race in *action* the career of political improvement. The history of England is the history of this great change in the moral, intellectual, and physical state of the inhabitants of our own island. There is much amusing and instructive episodical matter, but this is the main action. To us, we will own, nothing is so interesting and delightful as to contemplate the steps by which the England of the Domesday Book, the England of the curfew, and the forest laws, the England of crusaders, monks, schoolmen, astrologers, *subject matter* serfs, outlaws, became the England which we know and love, the classic ground of liberty, and philosophy, the school of all knowledge, the mart of all trade.

SIEGE OF TORQUILSTONE.

THE noise within the castle, occasioned by the defensive preparations, which had been considerable for some time, now increased into tenfold bustle and clamour. The heavy yet hasty step of the men-at-arms traversed the battlements, or resounded on the narrow and winding passages and stairs which led to the various bartisans and points of defence. The voices of the knights were heard, animating their followers or directing means of defence, while their commands were often drowned in the clashing of armour, or the clamorous shouts of those whom they addressed. Tremendous as these sounds were, and yet more terrible from the awful event which they presaged, there was a sublimity mixed with them which Rebecca's high-toned mind could feel even in that moment of terror. Her eye kindled, although the blood fled from her cheeks; and there was a strong mixture of fear and of a thrilling sense of the sublime, as she repeated, half whispering to herself, half speaking to her companion, the sacred text—"The quiver rattleth—the glittering spear and the shield—the noise of the captains and the shouting!"

But Ivanhoe was, like the war-horse of that sublime passage, glowing with impatience at his inactivity, and with an ardent desire to mingle in the affray of which these sounds were the introduction. "If I could but drag myself," he said, "to yonder window, that I might see how this brave game is like to go;—if I had but bow to shoot a shaft, or battle-axe to strike were it but a single blow for our deliverance! It is in vain—it is in vain—I am alike nerveless and weaponless!"

"Fret not thyself, noble knight," answered Rebecca; "the sounds have ceased of a sudden—it may be they join not battle."

"Thou knowest naught of it," said Wilfred impatiently; "this dead pause only shows that the men are at their posts on the walls, and expecting an instant attack; what we have heard was but the distant muttering of the storm—it will burst anon in all its fury. Could I but reach yonder window!"

"Thou wilt but injure thyself by the attempt, noble knight," replied his attendant. Observing his extreme solicitude, she firmly added, "I myself will stand at the lattice, and describe to you as I can what passes without."

"You must not—you shall not!" exclaimed Ivanhoe; "each lattice, each aperture, will be soon a mark for the archers; some random shaft—"

"It shall be welcome," murmured Rebecca, as with firm pace she ascended two or three steps which led to the window of which they spoke.

"Rebecca, dear Rebecca!" exclaimed Ivanhoe, "this is no maiden's pastime—do not expose thyself to wounds and death, and render me for ever miserable for having given occasion; at least cover thyself with yonder ancient buckler, and show as little of your person at the lattice as may be."

Following with wonderful promptitude the directions of Ivanhoe, and availing herself of the protection of the large ancient shield, which she placed against the lower part of the window, Rebecca, with tolerable security to herself, could witness part of what was passing without the castle, and report to Ivanhoe the preparations which the assailants were making for the storm. Indeed, the situation which she thus obtained was peculiarly favourable for this purpose, because, being placed on an angle of the main building, Rebecca could not only see what passed beyond the precincts of the castle, but also commanded a view of the out-^{body} ~~boundary~~. work likely to be the first object of the meditated assault. It was an exterior fortification of no great height or strength, intended to protect the postern gate, through which Cedric had been recently dismissed by Front-de-Bœuf. The castle moat divided this species of barbican from the rest of the fortress, so that, in case of its being taken, it was easy to cut off the communication with the main building by withdrawing the temporary bridge. In the out-work was a sally-port corresponding to the postern of the castle, ^{sally-ports} and the whole was surrounded by a strong palisade. Rebecca could observe, from the number of men placed for the defence of this post, that the besieged entertained apprehensions for its safety;

and from the mustering of the assailants in a direction nearly opposite to the outwork, it seemed no less plain that it had been selected as a vulnerable point of attack.

These appearances she hastily communicated to Ivanhoe, and added, "The skirts of the wood seem lined with archers, although only a few are advanced from its dark shadow."

"Under what banner?" asked Ivanhoe.

"Under no ensign of war which I can observe," answered Rebecca.

"A singular novelty," muttered the knight, "to advance to storm such a castle without pennon or banner displayed!—Seest thou who they be who act as leaders?"

"A knight clad in sable armour is the most conspicuous," said the Jewess: "he alone is armed from head to heel, and seems to assume the direction of all around him."

"What device does he bear on his shield?" replied Ivanhoe.

"Something resembling a bar of iron, and a padlock painted blue on the black shield."

"A fetterlock and shacklebolt azure," said Ivanhoe: "I know not who may bear the device, but well I ween it might now be mine own. Canst thou not see the motto?"

"Scarce the device itself at this distance," replied Rebecca: "but when the sun glances fair upon his shield, it shows as I tell you."

"Seem there no other leaders?" exclaimed the anxious inquirer.

"None of mark and distinction that I can behold from this station," said Rebecca; "but, doubtless, the other side of the castle is also assailed. They appear even now preparing to advance. What a dreadful sight! Those who advance first bear huge shields, and defences made of plank; the others follow, bending their bows as they come on. They raise their bows!"

Her description was here suddenly interrupted by the signal for assault, which was given by the blast of a shrill bugle, and at once answered by a flourish of the Norman trumpets from the

battlements, which, mingled with the deep and hollow clang of the nakers (a species of kettle-drum), retorted in notes of defiance the challenge of the enemy. The shouts of both parties augmented the fearful din, the assailants crying, "St. George for merry England!" and the Normans answering them with their battle-cries.

It was not, however, by clamour that the contest was to be decided, and the desperate efforts of the assailants were met by an equally vigorous defence on the part of the besieged. The archers, trained by their woodland pastimes to the most effective use of the long-bow, shot—to use the appropriate phrase of the time—so "wholly together," that no point at which a defender could show the least part of his person escaped their cloth-yard shafts. By this heavy discharge, which continued as thick and sharp as hail, while, notwithstanding every arrow had its individual aim, and flew by scores together against each embrasure and opening in the parapets, as well as at every window where a defender either occasionally had post, or might be suspected to be stationed—by this sustained discharge two or three of the garrison were slain, and several others wounded. But, confident in their armour of proof, and in the cover which their situation afforded, the followers of Front-de-Bœuf, and his allies, showed an obstinacy in defence proportioned to the fury of the attack, and replied with the discharge of their large cross-bows, as well as with their long-bows, slings, and other missile weapons, to the close and continued shower of arrows; and, as the assailants were necessarily but indifferently protected, did considerably more damage than they received at their hand. The whizzing of shafts and of missiles on both sides was only interrupted by the shouts which arose when either side inflicted or sustained some notable loss. *shorts*
gun shooting
considerable loss.

"And I must lie here like a bed-ridden monk!" exclaimed Ivanhoe, "while the game that gives me freedom or death is played out by the hands of others! Look from the window once again, kind maiden; but beware that you are not marked by the archers beneath. Look out once more, and tell me if they yet advance to the storm." *the battle*

With patient courage, strengthened by the interval which she

had employed in mental devotion, Rebecca again took post at the lattice, sheltering herself, however, so as not to be visible from beneath.

"What dost thou see, Rebecca?" again demanded the wounded knight.

"Nothing but the cloud of arrows flying so thick as to dazzle mine eyes, and to hide the bowmen who shoot them."

"That cannot endure," said Ivanhoe; "if they press not right on to carry the castle by pure force of arms, the archery may avail but little against stone walls and bulwarks. Look for the Knight of the Fetterlock, fair Rebecca, and see how he bears himself; for as the leader is, so will his followers be."

"I see him not," said Rebecca.

"Foul craven!" exclaimed Ivanhoe; "does he blench from the helm when the wind blows highest?"

"He blenches not! he blenches not!" said Rebecca; "I see him now. He leads a body of men close under the outer barrier of the barbican. They pull down the piles and palisades; they hew down the barriers with axes. His high black plume floats abroad over the throng, like a raven over the field of the slain. They have made a breach in the barriers—they rush in—they are thrust back! Front-de-Bœuf heads the defenders; I see his gigantic form above the press. They throng again to the breach, and the pass is disputed hand to hand, and man to man. It is like the meeting of two fierce tides—the conflict of two oceans moved by adverse winds!"

She turned her head from the lattice, as if unable longer to endure a sight so terrible.

"Look forth again, Rebecca," said Ivanhoe, mistaking the cause of her retiring; "the archery must, in some degree, have ceased, since they are now fighting hand to hand. Look again, there is now less danger."

Rebecca again looked forth, and almost immediately exclaimed, "Ah! Front-de-Bœuf and the Black Knight fight hand to hand in the breach, amid the roar of their followers, who watch the progress of the strife—Heaven strike with the cause of the oppressed and

chief

sub

attack, take
may, help, so
use.

dirty, when
he is in
sight

sign

the

throng

so fight

of the captive!" She then uttered a loud shriek, and exclaimed, "He is down!—he is down!"

"Who is down?" cried Ivanhoe; "tell me which has fallen?"

"The Black Knight," answered Rebecca, faintly; then instantly again shouted, with joyful eagerness—"But no!—but no!—he is on foot again, and fights as if there were twenty men's strength in his single arm. His sword is broken—he snatches an axe from a yeoman—he presses Front-de-Bœuf with blow on blow. The giant stoops and totters like an oak under the steel of the woodman—he falls!—he falls!"

"Front-de-Bœuf?" exclaimed Ivanhoe.

"Front-de-Bœuf!" answered the Jewess. "His men rush to the rescue, headed by the haughty Templar—their united force compels the champion to pause—they drag Front-de-Bœuf within the walls."

"The assailants have won the barriers, have they not?" said Ivanhoe.

"They have!—they have!" exclaimed Rebecca—"and they press the besieged hard upon the outer wall; some plant ladders, some swarm like bees, and endeavour to ascend upon the shoulders of each other—down go stones, beams, and trunks of trees upon their heads; and as fast as they bear the wounded to the rear, fresh men supply their places in the assault. Great God! hast thou given men thine own image, that it should be thus cruelly defaced by the hands of their brethren?" *collect.*

"Think not of that," said Ivanhoe; "this is no time for such thoughts. Who yield?—who push their way?"

"The ladders are thrown down," replied Rebecca, shuddering; "the soldiers lie grovelling under them like crushed reptiles—the besieged have the better."

"Ah!" exclaimed the knight; "do the false yeomen give way?"

"No!" exclaimed Rebecca, "they bear themselves right yeomanly—the Black Knight approaches the postern with his huge axe—the thundering blows which he deals, you may hear them above all the din and shouts of the battle—stones and beams are

hailed down on the bold champion—he regards them no more than if they were thistle-down or feathers !”

“Ha!” said Ivanhoe, raising himself joyfully on his couch, “methought there was but one man in England that might do such a deed !”

“The postern gate shakes,” continued Rebecca; “it crashes—it is splintered by his blows—they rush in—the outwork is won! O God!—they hurl the defenders from the battlements—they throw them into the moat. O men, if ye be indeed men, spare them that can resist no longer !”

“The bridge—the bridge which communicates with the castle—have they won that pass ?” exclaimed Ivanhoe.

“No,” replied Rebecca; “the Templar has destroyed the plank on which they crossed—few of the defenders escaped with him into the castle—the shrieks and cries which you hear tell the fate of the others. Alas! I see it is still more difficult to look upon victory than upon battle.”

“What do they now, maiden ?” said Ivanhoe; “look forth yet again—this is no time to faint at bloodshed.”

“It is over for the time,” answered Rebecca; “our friends strengthen themselves within the outwork which they have mastered, and it affords them so good a shelter from the foeman’s shot, that the garrison only bestow a few bolts on it from interval to interval, as if rather to disquiet than effectually to injure them.”

“Our friends,” said Wilfred, “will surely not abandon an enterprise so gloriously begun and so happily attained. Oh, no! I will put my faith in the good knight whose axe hath rent heart-of-oak and bars of iron. Singular,” he again muttered to himself, “if there be two who can do a deed of such *derring-do*!—a fetterlock and a shacklebolt on a field-sable—what may that mean?—seest thou naught else, Rebecca, by which the Black Knight may be distinguished ?”

“Nothing,” said the Jewess; “all about him is black as the wing of the night raven. Nothing can I spy that can mark him further;—but having once seen him put forth his strength in battle, methinks I could know him again among a thousand warriors.

He rushes to the fray as if he were summoned to a banquet.^{feast}
 There is more than mere strength,—there seems as if the whole
 soul and spirit of the champion were given to every blow which
 he deals upon his enemies. God forgive him the sin of bloodshed !
 —it is fearful, yet magnificent, to behold how the arm and heart
 of one man can triumph over hundreds.”

MARMION AND DOUGLAS.

* [The scene of Marmion, from which the following extract is taken, is laid in the beginning of the sixteenth century, concluding with the battle of Flodden, fought in 1513. Marmion, an English nobleman, a man of bad character, who had forged a paper, is sent as envoy to James IV. of Scotland. Douglas, by his sovereign's orders, receives him at his castle, and treats him with cold hospitality; and at last takes leave of him as follows:—]

Not far advanced was morning day,
 When Marmion did his troop array,
 To Surrey's camp to ride ;
 He had safe-conduct for his band,
 Beneath the royal seal and hand,
 And Douglas gave a guide :
 The ancient earl, with stately grace,
 Would Clara* on her palfrey place ;
 And whispered, in an under-tone,
 “Let the hawk stoop, his prey is flown.”
 The train from out the castle drew ;
 But Marmion stopped to bid adieu :—
 “Though something I might plain,” he said,
 “Of cold respect to stranger guest,
 Sent hither by your king's behest,
 While in Tantallon's† towers I stayed,
 Part we in friendship from your land,
 And, noble earl, receive my hand.”—
 But Douglas round him drew his cloak,
 Folded his arms, and thus he spoke :—)

* Clara was an English heiress, for whose hand Marmion had been an unsuccessful suitor, and whose lover he had attempted to ruin, but had failed in his purpose.

† Tantallon was the name of one of Douglas's castles.

"My manors, halls, and bowers, shall still
 Be open, at my sovereign's will,
 To each one whom he lists, howe'er
 Unmeet to be the owner's peer:
 My castles are my king's alone,
 From turret to foundation stone;—
 The hand of Douglas is his own,
 And never shall in friendly grasp
 The hand of such as Marmion clasp."—

Burned Marmion's swarthy cheek like fire,
 And shook his very frame for ire,

And—"This to me!" he said;—

"An 'twere not for thy hoary beard,
 Such hand as Marmion's had not spared,
 To cleave the Douglas' head!

And, first, I tell thee, haughty peer,
 He who does England's message here,
 Although the meanest in her state,
 May well, proud Angus,* be thy mate!
 And, Douglas, more I tell thee here,
 (Even in thy pitch of pride,

Here in thy hold, thy vassals near,
 (Nay, never look upon your lord,
 And lay your hands upon your sword.)—
 I tell thee thou'rt defied!

And if thou saidst I am not peer
 To any lord in Scotland here,
 Lowland or Highland, far or near,

Lord Angus, thou hast lied!"—
 On the earl's cheek the flush of rage

O'ercame the ashen hue of age,

Fierce he broke forth:—"And dar'st thou, then,
 To beard the lion in his den,
 The Douglas in his hall?

* Lord Angus was one of Douglas's titles.

And hop'st thou hence unscathed to go?—
 No! by Saint Bride of Bothwell, no!—
 Up drawbridge, grooms—what, warder, ho!
 Let the portcullis fall.”—

Lord Marmion turned,—well was his need,—*it was, and time to turn*
 And dashed the rowels in his steed, *spurred*
 Like arrow through the archway sprung—
 The ponderous gate behind him rung :
 To pass there was such scanty room,
 The bars, descending, razed his plume!

The steed along the drawbridge flies,
 Just as it trembled on the rise ;
 Nor lighter does the swallow skim
 Along the smooth lake's level brim :
 And when Lord Marmion reached his band,
 He halts, and turns with clinched hand,
 And shout of loud defiance pours,
 And shook his gauntlet at the towers.
 “Horse! horse!” the Douglas cried, “and chase!”
 But soon he reined his fury's pace ;
 “A royal messenger he came,
 Though most unworthy of the name.—
 A letter forged! Saint Jude to speed! *to protect.*
 Did ever knight so foul a deed!
 Saint Mary, mend my fiery mood,
 Old age ne'er cools the Douglas blood,
 I thought to slay him where he stood.
 ‘Tis pity of him, too,” he cried ;
 “Bold can he speak, and fairly ride :
 I warrant him a warrior tried.”—
 With this his mandate he recalls,
 And slowly seeks his castle halls.

SIR WALTER SCOTT.

THE TRIAL BY COMBAT.

“THERE is yet one chance of life left to me,” said Rebecca, “even by your own fierce laws. Life has been miserable—miserable, at least, of late—but I will not cast away the gift of God, while he affords me the means of defending it. I deny this charge—I maintain my innocence, and I declare the falsehood of this accusation—I challenge the privilege of trial by combat, and will appear by my champion.”

“And who, Rebecca,” replied the Grand Master, “will lay lance in rest for a sorceress? who will be the champion of a Jewess?”

“God will raise me up a champion,” said Rebecca: “it cannot be that in merry England, the hospitable, the generous, the free, where so many are ready to peril their lives for honour, there will not be found one to fight for justice. But it is enough that I challenge the trial by combat—there lies my gage.”

She took her embroidered glove from her hand, and flung it down before the Grand Master, with an air of mingled simplicity and dignity, which excited universal surprise and admiration.

* * * * *

“Give me her glove,” said Beaumanoir. “This is indeed,” he continued, as he looked at the flimsy texture and slender fingers, “a slight and frail gage for a purpose so deadly.—Seest thou, Rebecca; as this thin and light glove of thine is to one of our heavy steel gauntlets, so is thy cause to that of the Temple, for it is our Order which thou hast defied.”

“Cast my innocence into the scale,” answered Rebecca, “and the glove of silk shall outweigh the glove of iron.”

“Then thou dost persist in thy refusal to confess thy guilt, and in that bold challenge which thou hast made?”

“I do persist, noble sir,” answered Rebecca.

“So be it then, in the name of Heaven,” said the Grand Master; “and may God show the right!”

“Amen,” replied the Preceptors around him, and the word was deeply echoed by the whole assembly.

"Brethren," said Beaumanoir, "you are aware that we might well have refused to this woman the benefit of the trial by combat; but though a Jewess and an unbeliever, she is also a stranger and defenceless, and God forbid that she should ask the benefit of our laws, and that it should be refused to her. Moreover, we are knights and soldiers as well as men of religion, and shame it were to us, upon any pretence, to refuse proffered combat. Thus, therefore, stands the case: Rebecca, the daughter of Isaac of York, is, by many frequent and suspicious circumstances, defamed of sorcery practised on the person of a noble knight of our holy Order, and hath challenged the combat in proof of her innocence. To whom, reverend brethren, is it your opinion that we should deliver the gage of battle, naming him, at the same time, to be our champion on the field?"

"To Brian de Bois-Guilbert, whom it chiefly concerns," said the Preceptor of Goodalricke, "and who, moreover, best knows how the truth stands in this matter."

"It is well," said the Grand Master.—"Rebecca, in those lists shalt thou produce thy champion; and if thou failest to do so, or if thy champion shall be discomfited by the judgment of God, thou shalt then die the death of a sorceress, according to doom.—Let this our judgment be recorded, and the record read aloud, that no one may pretend ignorance."

Rebecca spoke not, but she looked up to heaven, and folding her hands, remained for a minute without change of attitude. She then modestly reminded the Grand Master that she ought to be permitted some opportunity of free communication with her friends, for the purpose of making her condition known to them, and procuring, if possible, some champion to fight in her behalf.

"It is just and lawful," said the Grand Master; "choose what messenger thou shalt trust, and he shall have free communication with thee in thy prison-chamber."

"Is there," said Rebecca, "any one here, who, either for love of a good cause, or for ample hire, will do the errand of a distressed being?"

All were silent; for none thought it safe, in the presence of the

Grand Master, to avow any interest in the calumniated prisoner, lest he should be suspected of leaning towards Judaism. (Not even the prospect of reward, far less any feelings of compassion alone, could surmount this apprehension.)

Rebecca stood for a few moments in indescribable anxiety, and then exclaimed, "Is it really thus?—And, in English land, am I to be deprived of the poor chance of safety which remains to me, for want of an act of charity which would not be refused to the worst criminal?"

Higg, the son of Snell, at length replied, "I am but a maimed man, but that I can at all stir or move was owing to her charitable assistance.—I will do thine errand," he added, addressing Rebecca, "as well as a crippled object can, and (happy were my limbs fleet enough to repair the mischief done by my tongue.) Alas! when I boasted of thy charity, I little thought I was leading thee into danger!"

"God," said Rebecca, is the disposer of all. (He can turn back the captivity of Judah,) even by the weakest instrument. (To execute his message the snail is as sure a messenger as the falcon, Seek out Isaac of York—here is that will pay for horse and man—let him have this scroll. (I know not if it be of Heaven the spirit which inspires me,) but most truly do I judge that I am not to die this death, and that a champion will be raised up for me. Farewell!—Life and death are in thy haste.)

The peasant took the scroll, which contained only a few lines in Hebrew. Many of the crowd would have dissuaded him from touching a document so suspicious; but Higg was resolute in the service of his benefactress.

"I will get me," he said, "my neighbour Buthan's good capul,* and I will be at York within as brief space as man and beast may."

But, as it fortune'd, he had no occasion to go so far; for within a quarter of a mile from the gate of the Preceptory he met with two riders, whom, by their dress and huge yellow caps, he knew to be Jews; and, on approaching more nearly, discovered that one

* *Capul*, that is, horse; in a more limited sense, work-horse.

of them was his ancient employer, Isaac of York. The other was the Rabbi Ben Samuel; and both had approached as near to the Preceptory as they dared, on hearing that the Grand Master had summoned a chapter for the trial of a sorceress. *meeting*

"How now, brother?" said Ben Samuel, interrupting his harangue to look towards Isaac, who had but glanced at the scroll which Higg offered, when, uttering a deep groan, he fell from his mule like a dying man, and lay for a minute insensible. *just-*

The Rabbi now dismounted in great alarm, and hastily applied the remedies which his art suggested for the recovery of his companion. He had even taken from his pocket a cupping apparatus, and was about to proceed to phlebotomy, when the object of his anxious solicitude suddenly revived; but it was to dash his cap from his head, and to throw dust on his gray hairs. The physician was at first inclined to ascribe this sudden and violent emotion to the effects of insanity; and, adhering to his original purpose, began once again to handle his implements. But Isaac soon convinced him of his error.

"Child of my sorrow," he said, "well shouldst thou be called *child of my sorrow* Benoni, instead of Rebecca! Why should thy death bring down my gray hairs to the grave?"

"Brother," said the Rabbi, in great surprise, "I trust that the child of thy house yet liveth?"

"She liveth," answered Isaac, "but she is captive unto those men of Belial, and they will wreak their cruelty upon her, sparing neither for her youth nor her comely favour. Oh! (she was as a *luc. look* crown of green palms to my gray locks; and she must wither in a night, like the gourd of Jonah!—Child of my love!—child of my old age!—O Rebecca, daughter of Rachel! the darkness of the shadow of death hath encompassed thee."

"Yet read the scroll," said the Rabbi; "peradventure it may be that we may yet find out a way of deliverance."

"Do thou read, brother," answered Isaac, "for mine eyes are as a fountain of water."

The physician read, but in their native language, the following words:—

the
=u
syu
thi
"To Isaac, the son of Adonikam, whom the Gentiles call Isaac of York, peace and the blessing of the promise be multiplied unto thee!—My father, I am as one doomed to die for that which my soul knoweth not—even for the crime of witchcraft. My father, if a strong man can be found to do battle for my cause with sword and spear, according to the custom of the Nazarenes, and that within the lists of Templestowe, on the third day from this time, peradventure our fathers' God will give him strength to defend the innocent, and her who hath none to help her. But if this may not be, let the virgins of our people mourn for me as for one cast off, and for the hart that is stricken by the hunter, and for the flower which is cut down by the scythe of the mower. Wherefore, look now what thou doest, and whether there be any rescue. One Nazarene warrior might, indeed, bear arms in my behalf, even Wilfred, son of Cedric, whom the Gentiles call Ivanhoe. But he may not yet endure the weight of his armour. Nevertheless, send the tidings unto him, my father; for he hath favour among the strong men of his people, and as he was our companion in the house of bondage, he may find some one to do battle for my sake. And say unto him, even unto him, even unto Wilfred, the son of Cedric, that if Rebecca live, or if Rebecca die, she liveth or dieth wholly free of the guilt she is charged withal. And if it be the will of God that thou shalt be deprived of thy daughter, do not thou tarry, old man, in this land of bloodshed and cruelty; but betake thyself to Cordova, where thy brother liveth in safety, under the shadow of the throne, even of the throne of Boabdil the Saracen; for less cruel are the cruelties of the Moors unto the race of Jacob than the cruelties of the Nazarenes of England."

Isaac listened with tolerable composure while Ben Samuel read the letter, and then again resumed the gestures and exclamations of Oriental sorrow, tearing his garments, besprinkling his head with dust, and ejaculating, "My daughter! my daughter!"

"Yet," said the Rabbi, "take courage, for this grief availeth nothing. Seek out this Wilfred, the son of Cedric. It may be he will help thee with counsel or with strength; for the youth hath favour in the eyes of Richard, called of the Nazarenes

Cœur-de-Lion, and the tidings that he hath returned are constant in the land. [It may be that he may obtain his letter, and his signet, commanding these men of blood, who take their name from the Temple to the dishonour thereof, that they proceed not in their purposed wickedness;]

"I will seek him out," said Isaac, "for he is a good youth, and hath compassion for the exile of Jacob. But he cannot bear his armour, and what other Christian shall do battle for the oppressed of Zion?"

THE TRIAL BY COMBAT—Continued.

Our scene now returns to the exterior of the Castle, or Preceptory, of Templestowe, about the hour when the bloody die was to be cast for the life or death of Rebecca. It was a scene of bustle and life, as if the whole vicinity had poured forth its inhabitants to a village wake, or rural feast.

The eyes of a very considerable multitude were bent on the gate of the Preceptory of Templestowe, with the purpose of witnessing the procession; while still greater numbers had already surrounded the tilt-yard belonging to that establishment. This enclosure was formed on a piece of level ground adjoining to the Preceptory, which had been levelled with care, for the exercise of military and chivalrous sports. It occupied the brow of a soft and gentle eminence, was carefully palisaded around, and, as the Templars willingly invited spectators to be witnesses of their skill in feats of chivalry, was amply supplied with galleries and benches for their use.

On the present occasion, a throne was erected for the Grand Master at the east end, surrounded with seats of distinction for the Preceptors and Knights of the Order. Over these floated the sacred standard, called *Le Beau-seant*, which was the ensign, as its name was the battle-cry, of the Templars.

At the opposite end of the lists was a pile of fagots, so arranged around a stake, deeply fixed in the ground, as to leave a space for the victim whom they were destined to consume, to

enter within the fatal circle in order to be chained to the stake by the fetters which hung ready for the purpose.

The heavy bell of the church of Saint Michael of Templestowe, a venerable building, situated in a hamlet at some distance from the Preceptory, was rung. One by one the sullen sounds fell successively on the ear, (leaving but sufficient space for each to die away in distant echo,) ere the ear was again filled by repetition of the iron knell. These sounds, the signal of the approaching ceremony, chilled with awe the hearts of the assembled multitude, whose eyes were now turned to the Preceptory, expecting the approach of the Grand Master, the champion, and the criminal.

At length the drawbridge fell, the gates opened, and a knight, bearing the great standard of the Order, sallied from the castle, preceded by six trumpets, and followed by the Knights Preceptors, two and two, the Grand Master coming last, mounted on a stately horse, whose furniture was of the simplest kind. Behind him came Brian de Bois-Guilbert, (armed cap-a-pie) in bright armour, but without his lance, shield, and sword, which were borne by his two esquires behind him.

Behind them followed other Companions of the Temple, with a long train of esquires and pages clad in black, aspirants to the honour of being one day Knights of the Order. After these came a guard of warders on foot, in the same sable livery, amidst whose partisans might be seen the pale form of the accused, moving with a slow but undismayed step towards the scene of her fate. She was stripped of all her ornaments, lest, perchance, there should be among them some of those amulets which Satan was supposed to bestow upon his victims, to deprive them of the power of confession even when under the torture. A coarse white dress, of the simplest form, had been substituted for her Oriental garments; yet there was such an exquisite mixture of courage and resignation in her look, that even in this garb, and with no other ornament than her long black tresses, each eye wept that looked upon her.

A crowd of inferior personages belonging to the Preceptory

followed the victim, all moving with the utmost order, with arms folded, and looks bent upon the ground.

This slow procession moved up the gentle eminence, on the summit of which was the tilt-yard, and, entering the lists, marched once around them from right to left, and when they had completed the circle, made a halt. There was then a momentary bustle, while the Grand Master and all his attendants, excepting the champion and his godfathers, dismounted from their horses, which were immediately removed out of the lists by the esquires, who were in attendance for that purpose.

The unfortunate Rebecca was conducted to the black chair placed near the pile. On her first glance at the terrible spot where preparations were making for a death alike dismaying to the mind and painful to the body, she was observed to shudder and shut her eyes,—praying internally, doubtless, for her lips moved though no speech was heard. In the space of a minute she opened her eyes, looked fixedly on the pile, as if to familiarize her mind with the object, and then slowly and naturally turned away her head. *ad. m*

Meanwhile the Grand Master had assumed his seat: and when the chivalry of his Order was placed around and behind him, each in his due rank, a loud and long flourish of the trumpets announced that the Court were seated for judgment. Malvoisin, then, acting as godfather of the champion, stepped forward, and laid the glove of the Jewess, which was the pledge of battle, at the feet of the Grand Master. *ad. m*

“Valorous Lord and Reverend Father,” said he, “here standeth the good Knight, Brian de Bois-Guilbert, Knight Preceptor of the Order of the Temple, who, by accepting the pledge of battle which I now lay at your reverence’s feet, hath become bound to do his devoir in combat this day,—to maintain that this Jewish maiden, by name Rebecca, hath justly deserved the doom passed upon her in a chapter of this most Holy Order of the Temple of Zion, condemning her to die as a sorceress;—here, I say, he standeth, such battle to do, knightly and honourable, if such be your noble pleasure.” *ad. m*

the
w
just
The Grand Master at once commanded the herald to stand forth and do his devoir. The trumpets then again flourished, and a herald, stepping forward, proclaimed aloud,—“Oyez, oyez, oyez.—Here standeth the good Knight, Sir Brian de Bois Guilbert, ready to do battle with any knight of free blood who will sustain the quarrel allowed and allotted to the Jewess, Rebecca; and to such champion the Reverend and Valorous Grand Master, here present, allows a fair field, and (equal partition of sun and wind,) and whatever else appertains to a fair combat.” The trumpets again sounded; and there was a dead pause of many minutes.

can.
sy
thi
30
“No champion appears for the appellant,” said the Grand Master. “Go, herald, and ask her whether she expects any one to do battle for her in this her cause.” The herald went to the chair in which Rebecca was seated, and spoke to her in these terms:—“Damsel, the Honourable and Reverend the Grand Master demands of thee if thou art prepared with a champion to do battle this day in thy behalf, or if thou dost yield thee as one justly condemned to a deserved doom?”

thi
30
“Say to the Grand Master,” replied Rebecca, “that I maintain my innocence, and do not yield me as justly condemned, lest I become guilty of mine own blood. Say to him, that I challenge such delay as his forms will permit, to see if God, whose opportunity is in man’s extremity, will raise me up a deliverer; and when such uttermost space is passed, may His holy will be done!” The herald retired to carry this answer to the Grand Master.

thi
30
“God forbid,” said Lucas Beaumanoir, “that Jew or Pagan should impeach us of injustice!—(Until the shadows be cast from the west to the eastward) will we wait to see if a champion shall appear for this unfortunate woman. When the day is so far past, let her prepare for death.”

thi
30
The herald communicated the words of the Grand Master to Rebecca, who bowed her head submissively, folded her arms, and, looking up towards heaven, seemed to expect that aid from above which she could scarce promise herself from man.

thi
30
It was the general belief that no one could or would appear for a Jewess accused of sorcery; and the knights, instigated by

Malvoisin, whispered to each other that it was time to declare the pledge of Rebecca forfeited. At this instant a knight, urging *passed* his horse to speed, appeared on the plain advancing towards the lists. A hundred voices exclaimed, "A champion! a champion!" And despite the prepossessions and prejudices of the multitude, *he was* they shouted unanimously as the knight rode into the tilt-yard *with one opinion*. The second glance, however, served to destroy the hope that his timely arrival had excited. His horse, urged for many miles to its utmost speed, appeared to reel from fatigue; and the rider, however undauntedly he presented himself in the lists, either from weakness, weariness, or both, seemed scarce able to support himself in the saddle.

To the summons of the herald, who demanded his rank, his name, and purpose, the stranger knight answered readily and boldly, "I am a good knight and noble, come hither to sustain with lance and sword the just and lawful quarrel of this damsel, Rebecca, daughter of Isaac of York; to uphold the doom pronounced against her to be false and truthless, and to defy Sir Brian de Bois-Guilbert, as a traitor, murderer, and liar; as I will prove in this field with my body against his, by the aid of God, of Our Lady, and of Monseigneur Saint George, the good knight," *may*

"The stranger must first show," said Malvoisin, "that he is a good knight, and of honourable lineage. The Temple sendeth not forth her champions against nameless men."

"My name," said the knight, raising his helmet, "is better known, my lineage more pure, Malvoisin, than thine own. I am Wilfred of Ivanhoe."

"I will not fight with thee at present," said the Templar, in a changed and hollow voice. "Get thy wounds healed, purvey thee a better horse, and it may be I will hold it worth my while to scourge out of thee this boyish spirit of bravade."

"Ha! proud Templar," said Ivanhoe, "hast thou forgotten that twice thou didst fall before this lance? Remember the lists at Acre—remember the Passage of Arms at Ashby—remember thy proud vaunt in the halls of Rotherwood, and the gage of your gold chain against my reliquary, that thou wouldst do battle with *proud*

Wilfred of Ivanhoe, and recover the honour (thou hadst lost),
By that reliquary, and the holy relic it contains, I will proclaim
thee, Templar, a coward in every court in Europe—unless thou do
battle without further delay.”

Bois-Guilbert turned his countenance irresolutely towards Rebecca, and then exclaimed, looking fiercely at Ivanhoe, "Dog of a Saxon! take thy lance, and prepare for the death thou hast drawn upon thee!"

"Does the Grand Master allow me the combat?" said Ivanhoe.

"I may not deny what thou hast challenged," said the Grand Master, "provided the maiden accepts thee as her champion. Yet I would thou wert in better plight, to do battle. (An enemy of our Order hast thou ever been, yet would I have thee honourably met with.)"

“Thus—thus as I am, and not otherwise,” said Ivanhoe; “it is the judgment of God—to his keeping I commend myself.—Rebecca,” said he, riding up to the fatal chair, “dost thou accept of me for thy champion?”

"I do," she said, "I do,"—fluttered by an emotion which the fear of death had been unable to produce—"I do accept thee as the champion whom Heaven hath sent me. Yet, no—no—thy wounds are uncured. Meet not that proud man—why shouldst thou perish also?"

But Ivanhoe was already at his post, and had closed his visor and assumed his lance. Bois-Guilbert did the same; and his esquire remarked, as he clasped his visor, that his face, which had, notwithstanding the variety of emotions by which he had been agitated, continued during the whole morning of an ashy paleness, was now become suddenly very much flushed.

The herald, then, seeing each champion in his place, uplifted his voice, repeating thrice—"*Faites vos devoirs, preux chevaliers !*" After the third cry, he withdrew to one side of the lists, and again proclaimed that none, on peril of instant death, should dare, by word, cry, or action, to interfere with or disturb this fair field of combat. The Grand Master, who held in his hand the gage of

battle, Rebecca's glove, now threw it into the lists, and pronounced the fatal words, "*Laissez aller.*" *Let go.*

The trumpets sounded, and the knights charged each other in full career. The wearied horse of Ivanhoe, and its no less exhausted rider, went down, as all had expected, before the well-aimed lance and vigorous steed of the Templar. This issue of the combat all had foreseen; but although the spear of Ivanhoe did but, in comparison, touch the shield of Bois-Guilbert, that champion, to the astonishment of all who beheld it, reeled in his saddle, lost his stirrups, and fell in the lists.

Ivanhoe, extricating himself from his fallen horse, was soon on foot, hastening to mend his fortune with his sword; but his antagonist arose not. Wilfred, placing his foot on his breast, and the sword's point to his throat, commanded him to yield him, or die on the spot. Bois-Guilbert returned no answer.

"Slay him not, Sir Knight," cried the Grand Master, "unshriven and unabsolved—kill not body and soul! We allow him vanquished."

He descended into the lists, and commanded them to unhelm the conquered champion. His eyes were closed—the dark red flush was still on his brow. As they looked on him in astonishment, the eyes opened—but they were fixed and glazed. The flush passed from his brow, and gave way to the pallid hue of death. (Unscathed by the lance of his enemy, he had died a victim to the violence of his own contending passions.)

"This is indeed the judgment of God," said the Grand Master, looking upwards—"Fiat voluntas tua!" *thy will be done.*

TRIAL BY COMBAT—Continued.

When the first moments of surprise were over, Wilfred of Ivanhoe demanded of the Grand Master, as judge of the field, if (he had manfully and rightfully done his duty in the combat?)

"Manfully and rightfully hath it been done," said the Grand Master; "I pronounce the maiden free and guiltless. The arms

and the body of the deceased knight are (at the will) of the victor."

"I will not despoil him of his weapons," said the Knight of Ivanhoe, "nor condemn his corpse to shame; God's arm, no human hand, hath this day struck him down. But let his obsequies be private, as becomes those of a man who died in an unjust quarrel.—And for the maiden—"

He was interrupted by a clattering of horses' feet, advancing in such numbers, and so rapidly, as to shake the ground before them; and the Black Knight galloped into the lists. He was followed by a numerous band of men-at-arms, and several knights in complete armour.

"I am too late," he said, looking around him. "I had doomed Bois-Guilbert for mine own property;—Ivanhoe, was this well, to take on thee such a venture, and thou scarce able to keep thy saddle?"

"Heaven, my liege," answered Ivanhoe, "hath taken this proud man for its victim. (He was not to be honoured in dying as your will had designed.)"

"Peace be with him," said Richard, looking steadfastly on the corpse, "if it may be so—he was a gallant knight, and has died in his steel harness full knightly."

During the tumult Rebecca saw and heard nothing—she was locked in the arms of her aged father, giddy, and almost senseless, with the rapid change of circumstances around her. But one word from Isaac at length recalled her scattered feelings.

"Let us go," he said, "my dear daughter, my recovered treasure—let us go to throw ourselves at the feet of the good youth."

"Not so," said Rebecca; "oh no—no—no—I must not at this moment dare to speak to him—Alas! I should say more than—No, my father, let us instantly leave this evil place."

"But, my daughter," said Isaac, "to leave him who hath come forth like a strong man with his spear and shield, holding his life as nothing, so he might redeem thy captivity; and thou, too, the daughter of a people strange unto him and his—this is service to be thankfully acknowledged."

"It is—it is—most thankfully—most devoutly acknowledged," said Rebecca—"it shall be still more so—but not now: for the sake of thy beloved Rachel, father, grant my request—not now!"

"Nay, but," said Isaac, insisting, "they will deem us more thankless than mere dogs!"

"But thou seest, my dear father, that King Richard is in presence, and that—"

"True, my best, my wisest Rebecca!—Let us hence!—let us hence!—Money he will lack, for he has just returned from Palestine, and, as they say, from prison; and pretext for exacting it, *yes* should he need any, may arise out of my simple traffic with his brother John. Away, away, let us hence!"

And hurrying his daughter in his turn, he conducted her from the lists, and by means of a conveyance which he had provided, transported her safely to the house of the Rabbi Nathan.

Briefly after the judicial combat, Cedric the Saxon was summoned to the court of Richard, which, for the purpose of quieting the counties that had been disturbed by the ambition of his brother, was then held at York. Cedric hesitated more than once at the message; but he refused not obedience. In fact, the return of Richard had quenched every hope that he had entertained of restoring a Saxon dynasty in England; for, whatever head the Saxons might have made in the event of a civil war, it was plain that nothing could be done under the undisputed dominion of Richard, popular as he was by his personal good qualities and military fame, although his administration was wilfully careless—now too indulgent, and now allied to despotism.)

Cedric's aversion to the Norman race of kings was also much undermined;—first, by consideration of the impossibility of riding England of the new dynasty, a feeling which goes far to create loyalty in the subject to the king *de facto*; and, secondly, by the personal attention of King Richard, who delighted in the blunt humour of Cedric, and, to use the language of the Wardour Manuscript, so dealt with the noble Saxon, that, ere he had been a guest at court for seven days, he had given his consent to the marriage of his ward Rowena and his son Wilfred of Ivanhoe.

The nuptials of our hero, thus formally approved by his father, were celebrated in the most august of temples, the noble Minster of York. The King himself attended, and, from the countenance which he afforded on this and other occasions to the distressed and hitherto degraded Saxons, gave them a safer and more certain prospect of attaining their just rights, than they could reasonably hope from the precarious chance of civil war.

(Gurth, gallantly apparelled, attended as esquire upon his young master, whom he had served so faithfully; and the magnanimous Wamba, decorated with a new cap and a most gorgeous set of silver bells. Sharers of Wilfred's dangers and adversity, they remained, as they had a right to expect, the partakers of his more prosperous career.

But besides this domestic retinue, these distinguished nuptials were celebrated by the attendance of the high-born Normans, as well as Saxons, joined with the universal jubilee of the lower orders, that marked the marriage of two individuals as a pledge of the future peace and harmony betwixt two races, which, since that period, have been so completely mingled, that the distinction has become wholly invisible.) Cedric lived to see this union approximate towards its completion; for as the two nations mixed in society and formed intermarriages with each other, the Normans abated their scorn, and the Saxons were refined from their rusticity. But it was not until the reign of Edward the Third that the mixed language, now termed English, was spoken at the court of London, and that the hostile distinction of Norman and Saxon seems entirely to have disappeared.

It was upon the second morning after this happy bridal, that the Lady Rowena was made acquainted by her handmaid, Elgitha, that a damsel desired admission to her presence, and solicited that their parley might be without witness.) Rowena wondered, hesitated, became curious, and ended by commanding the damsel to be admitted, and her attendants to withdraw.

She entered—a noble and commanding figure, the long white veil in which she was shrouded overshadowing, rather than concealing, the elegance and majesty of her shape. Her demeanour

was that of respect, unmingled by the least shade either of fear or of a wish to propitiate favour. Rowena was ever ready to acknowledge the claims and attend to the feelings of others. She arose, and would have conducted her lovely visitor to a seat; but the stranger looked at Elgitha, and again intimated a wish to discourse with the Lady Rowena alone. Elgitha had no sooner retired with unwilling steps, than, to the surprise of the Lady of Ivanhoe, her fair visitant kneeled on one knee, pressed her hands to her forehead, and bending her head to the ground, in spite of Rowena's resistance, kissed the embroidered hem of her tunic. *dress*

"What means this, lady?" said the surprised bride; "or why do you offer me a deference so unusual?"

"Because to you, Lady of Ivanhoe," said Rebecca, rising up and resuming the usual quiet dignity of her manner, "I may lawfully, and without rebuke, pay the debt of gratitude which I owe to Wilfred of Ivanhoe. I am—forgive the boldness which has offered to you the homage of my country—I am the unhappy Jewess for whom your husband hazarded his life against such fearful odds in the tilt-yard of Templestowe."

"Damsel," said Rowena, "Wilfred of Ivanhoe on that day rendered back but in slight measure your unceasing charity towards him in his wounds and misfortunes. Speak, is there aught remains in which he or I can serve thee?"

"Nothing," said Rebecca, calmly, "unless you will transmit to him my grateful farewell."

"You leave England, then?" said Rowena, scarce recovering the surprise of this extraordinary visit.

"I leave it, lady, ere this moon again changes. My father hath a brother high in favour with Mohammed Boabdil, King of Granada—thither we go, secure of peace and protection, for the payment of such ransom as the Moslem exact from our people."

"And are you not, then, as well protected in England?" said Rowena. "My husband has favour with the King—the King himself is just and generous."

"Lady," said Rebecca, "I doubt it not; but the people of England are a fierce race, quarrelling ever with their neighbours or among themselves, and ready to plunge the sword into the bowels of each other. Such is no safe abode for the children of my people. (Ephraim is an heartless dove; Issachar an overlaboured drudge, which stoops between two burdens.) Not in a land of war and blood, surrounded by hostile neighbours, and distracted by internal factions, can Israel hope to rest during his wanderings." *Here Jews were in a very wretched state.*

"But you, maiden," said Rowena—"you surely can have nothing to fear. She who nursed the sick-bed of Ivanhoe," she continued, rising with enthusiasm—"she can have nothing to fear in England, where Saxon and Norman will contend who shall most do her honour."

"Thy speech is fair, lady," said Rebecca, "and thy purpose fairer; but it may not be—there is a gulf betwixt us. Our breeding, our faith, alike forbid either to pass over it. Farewell!—yet, ere I go, indulge me one request. The bridal veil hangs over thy face; deign to raise it, and let me see the features of which fame speaks so highly."

"They are scarce worthy of being looked upon," said Rowena; "but, expecting the same from my visitant, I remove the veil."

She took it off, accordingly; and, partly from the consciousness of beauty, partly from bashfulness, she blushed so intensely, that cheek, brow, neck, and bosom, were suffused with crimson. Rebecca blushed also, but it was a momentary feeling, and, mastered by higher emotions, passed slowly from her features, like the crimson cloud, which changes colour when the sun sinks beneath the horizon.

"Lady," she said, "the countenance you have deigned to show me will long dwell in my remembrance. There reign in it gentleness and goodness; and (if a tinge of the world's pride or vanities may mix with an expression so lovely, how should we chide that which is of earth for bearing some colour of its original?) Long, long will I remember your features, and bless God that I leave my noble deliverer united with—"

She stopped short—her eyes filled with tears. She hastily wiped them, and answered to the anxious inquiries of Rowena, “I am well, lady—well. But my heart swells when I think of Torquilstone and the lists of Templestowe.—Farewell! One, the most trifling part of my duty, remains undischarged. Accept this casket—startle not at its contents.”

Rowena opened the small silver-chased casket, and perceived a carcanet, or necklace, with ear-jewels, of diamonds, which were obviously of immense value.

“It is impossible,” she said, tendering back the casket. “I dare not accept a gift of such consequence.”

“Yet keep it, lady,” returned Rebecca.—“You have power, rank, command, influence; we have wealth, the source both of our strength and weakness. The value of these toys ten times multiplied would not influence half so much as your slightest wish. To you, therefore, the gift is of little value; and to me, what I part with is of much less. Let me not think you deem so wretchedly ill of my nation as your commons believe. Think ye that I prize these sparkling fragments of stone above my liberty? or that my father values them in comparison to the honour of his only child? Accept them, lady—to me they are valueless. I will never wear jewels more.—Farewell! May He who made both Jew and Christian shower down on you his choicest blessings! The bark that wafts us hence will be under weigh ere we can reach the port.”

She glided from the apartment, leaving Rowena surprised as if a vision had passed before her. The fair Saxon related the singular conference to her husband, on whose mind it made a deep and lasting impression.

Ivanhoe distinguished himself in the service of Richard, and was graced with further marks of the royal favour. He might have risen still higher, but for the premature death of the heroic Cœur-de-Lion before the Castle of Chaluz, near Limoges.

SIR WALTER SCOTT.

TRAVELLING IN ENGLAND IN THE END OF THE SEVENTEENTH CENTURY.

25 OF all inventions, the alphabet and printing alone excepted, those which abridge distance have done most for the civilization of (our species,) (In the seventeenth century, the inhabitants of London were, (for almost every practical purpose,) further from Reading than they now are from Edinburgh,) and further from Edinburgh than they now are from Vienna. There were no railways except a few (made of timber,) on which coals were carried from the mouths of the Northumbrian pits to the banks of the Tyne. There was very little (internal communication,) by water. A few attempts had been made to deepen and embank the natural streams, but with little success. Hardly a single canal had been attempted. (The English of that day were in the habit of talking with mingled admiration and despair, of the immense trench by which Louis XIV. had made a junction between the Atlantic and the Mediterranean.) They little thought that their own country would, in the course of a few generations, be intersected, at the cost of private adventurers, by (artificial rivers,) making up more than four times the length of the Thames, the Severn, and the Trent together.

26 It was by the highways that both travellers and goods generally passed from place to place; and those highways appear to have been much worse than might have been expected from the degree of wealth and civilization which the nation had even then attained. It was only, in fine weather, that the whole breadth of the road was available for wheeled vehicles. Often the mud lay deep on right and left, and only a narrow track of firm ground rose above the quagmire. It happened almost every day that coaches stuck fast, until a team of cattle could be procured from some neighbouring farm to (tug them out of the slough.) The great route through Wales to Holyhead was in such a state that, in 1685, a viceroy going to Ireland was *five* hours in travelling *fourteen* miles, from St. Asaph to Conway. In general, carriages were taken

to pieces at Conway, and borne on the shoulders of stout Welsh peasants to the Menai Strait. The markets were often inaccessible during several months. It is said that the fruits of the earth were suffered to rot in one place, while in another, only a few miles distant, the supply fell far short of the demand.)

On the best highways, heavy articles were, in the time of Charles II., generally conveyed from place to place by waggons. The expense of transmitting them was enormous. From London to Birmingham the charge was £7 a ton; from London to Exeter. £12;—that is, more by a third than was afterwards charged on turnpike roads, and fifteen times what is now demanded by rail-*tollgates* way companies. Coal was never seen except in the districts where it was produced, or to which it could be carried by sea; and was, indeed, always known in the south of England by the name of sea-coal. The rich commonly travelled in their iron carriages with at least four horses. (A coach and six is in our time never seen, 29 except as part of some procession. The frequent mention, therefore, of such equipages in old books is likely to mislead us. (We attribute to magnificence what was really the effect of disagreeable necessity.)) People in the time of Charles II. travelled with six horses, because with a smaller number there was danger of sticking fast in the mire.

About the middle of the seventeenth century a public coach, commenced to run between London and Oxford. It performed the journey in two days. At length, in 1669, it was announced that a vehicle, described as "The Flying Coach," would perform the journey between sunrise and sunset. (This spirited 30 undertaking was solemnly considered and sanctioned by the heads of the University, and seems to have excited the same sort of interest which is excited in our own time by the opening of a new railway.) The success of the experiment was complete, and by the end of the reign of Charles II. flying coaches ran thrice a week from London to the chief towns. The ordinary day's journey was about fifty miles in summer; but in winter, when the roads were bad and the nights long, little more than thirty. The Chester coach, the York coach, and the Exeter coach,

generally reached London in four days during the fine season, but at Christmas not till the sixth day. These flying coaches were extolled as far superior to any similar vehicles ever known in the world. (Their velocity is the subject of special commendation, and is triumphantly contrasted with the sluggish pace of the continental posts.) *were greatly exposed to the danger.*

Whatever might be the way in which a journey was performed, the travellers, unless they were numerous and well armed, ran considerable risk of being stopped and plundered. The mounted highway-man, a marauder known to our generation only from books, was to be found on every main road. The waste tracts which lay round about London were especially haunted by this class. (The public authorities seem to have been at a loss how to deal with the plunderers.) (At one time it was announced in *the Gazette* that several persons, who were strongly suspected of being highway-men, but against whom there was not sufficient evidence, would be paraded at Newgate in riding dresses.) Their horses would also be shown. All gentlemen who had been robbed were invited to inspect this singular exhibition. On another occasion, a pardon was publicly offered to a robber, if he would give up some rough diamonds of immense value which he had taken when he stopped the Harwich mail.

• All the various dangers by which the traveller was beset were greatly increased by darkness. He was, therefore, commonly desirous of having the shelter of a roof during the night; and such shelter it was not difficult to obtain. From a very early period the inns of England had been renowned. (Our first great poet had described the excellent accommodation which they afforded to the pilgrims of the fourteenth century. Nine-and-twenty persons, with their horses, found room in the wide chambers and stables of the Tabard in Southwark. In the seventeenth century England abounded in excellent inns of every rank. The traveller sometimes in a small village lighted on a public-house, such as Walton has described, where the brick floor was swept clean; where the walls were stuck round with ballads; where the sheets smelt of lavender; and where a blazing fire, a cup of

34 good ale, and a dish of trouts fresh from the neighbouring brook, were to be procured at a small charge. Indeed, it is certain that, on the whole, the improvement of our houses of public entertainment has not kept pace with the improvement of our roads and of our conveyances. Nor is this strange; for it is evident that, all other circumstances being equal, the inns will be best where the means of locomotion are worst. A hundred and sixty years ago, a person who came up to the capital from a remote county generally required by the way twelve or fifteen meals, and lodging for five or six nights. If he was a great man, he expected the meals and lodging to be comfortable, and even luxurious. At present we fly from York or Exeter to London by the light of a single winter's day. At present, therefore, a traveller seldom interrupts his journey merely for the sake of rest or refreshment. The consequence is, that hundreds of excellent inns have fallen into utter decay. In a short time, no good houses of this description will be found, except at places where strangers are likely to be detained by business or pleasure.—*Abridged from Macaulay's History of England.* ^{has not gone as fast as} ^{reached}

THE GROWTH AND SIZE OF CITIES.

34 THE line of the gentle Cowper, "God made the country and man made the town," has passed into a proverb. When it is intended to mean, as the poet himself explains it, that the contemplation of Nature's charms—the groves and fields, the song of the thrush and the nightingale—are more fitted to exercise a beneficial influence on the mind than the artificial amusements of the town, this adage expresses an unquestionable truth. But the (additional ideas) of the poet,—that the town, as compared with the country, is unfavourable to the progress of virtue, and that the congregating of men in large cities is something like a thwarting of the designs of Providence in regard to them,—however fine they may be as poetical fancies, are not in accordance with what experience teaches. A very slight glance at the page of history, whether sacred or secular, will show how important is the part ^{good effect} ^{hinders} ^{defeating} ^{respecting}

that towns have played in advancing the best interests of man. Look at the earliest propagators of Christianity. (What places did the divinely inspired apostles select as the summits on which to light (the first beacon-fires of divine truth?) The names of Jerusalem, Antioch, Athens, Corinth, and Rome, rise up before us in answer. During the middle ages, commercial activity and individual freedom were preserved in a few cities, when they had disappeared from all other parts of the continent of Europe. In the great struggle for civil and religious liberty in our country in the seventeenth century, the towns, for the most part, ranged themselves on the side of freedom. In our own times they have become more than ever the centres of activity, intelligence, and combined action for religious and philanthropic ends; so that, more than even in the past, the history of the world will become identified with that of its large towns. *charitable purposes*

It is only in recent times that we have become familiarized with the sudden rising of large towns. In earlier periods they grew much more slowly, and the causes of their formation were, for the most part, two-fold. The establishment of a church was very commonly the commencement. This will at once explain the reason why so many places in England begin or end with the word *church*, and in Scotland with *kirk*. In a similar manner we get a glimpse of our country's history from such terminations as *minster*, so common in English towns, and derived from *monasterium*, a religious house; and from such prefixes as *kil*, in Kilmarnock, Kilpatrick, &c., *kil* signifying a cell or chapel. In this way the origin of more than eighty towns and villages in Britain has been ascertained.

But the warlike habits of our ancestors had fully as much to do with the establishment of towns as the spread of religion. A castle or stronghold was often the centre around which a town was formed. The dread of robbers and marauders drove the baron's retainers and dependants to seek security in the immediate vicinity of the castle. The terminations *castle*, *caster*, or *chester*, (a fortified place,) and in several cases *burgh*, (one of the earliest meanings of which is a stronghold,) indicate an origin of this kind.

But it is when we come to the time of our manufacturing and

commercial greatness, and to the extension of our colonies, that we witness the spectacle of great cities rising with a rapidity truly marvellous. As the cotton trade in Manchester and Glasgow has increased, so has the population of these cities, with a regularity that is somewhat striking. We find almost the same results if we compare the increase in Leeds with the progress of the woollen trade, in Dundee with that in linen, and in Birmingham with that in iron.

From the beginning of the seventeenth century Manchester has been engaged in the cotton manufacture. Its supplies of material were at first drawn, strange to say, from Cyprus and Smyrna. Its annual supply of raw cotton at the end of the seventeenth century would now scarcely meet the demand of twenty-four hours. It had then a population of 6,000, and contained neither a printing-press nor a coach. It possesses now more than one hundred printing presses, and supports twenty coach-makers.—The first house in Leeds was built in the seventeenth century. The population in the time of Charles II. was below 7,000; it is now nearly 200,000.—In 1685 the manufacturers of Birmingham boasted that their trade was so extensive that their goods were sent over to Ireland! The population was then 4,000; it is now more than fifty times that amount. In the beginning of the eighteenth century Birmingham did not contain a single bookseller's shop. On market day a bookseller—Michael Johnson, the father of the lexicographer—came over from Lichfield and opened a book-stall for a few hours!

At the time of the Reformation, Glasgow had a population of about 2,000. By 1660, a century after, it had increased to 14,000. In another century it had doubled, and (by the beginning of the present century it had reached 83,000.) Thus in about one hundred and fifty years it had increased more than 80,000. But when the cotton trade began, it advanced by the same amount in *twenty-five* years. During the first thirty years of the present century the population increased two and a half times, and the number of cotton spindles in use three times; during the second thirty years the population has nearly doubled, and the number of spindles has been almost trebled.—In Dundee the correspondence between the increase in population and in the staple manufacture is still more striking.)³⁷

*Dictionary
maker.*

A comparison of the number of people inhabiting town and country brings out some curious and interesting results:—At the close of the seventeenth century the population of England was about 5,000,000. At that time it contained no town, except London, with a population of more than 30,000, and only four contained as many as 10,000. Now considerably more than *one-half* live in towns; more than one in *four* live in towns of above 30,000 of a population; and, as in Scotland, fully every *eighth* person lives in the largest town. To say that London contains a population equal to that of the whole of Scotland gives scarcely an adequate idea of its size. It contains a population nearly three times that of Norway, a country greater in extent than the whole British Islands; and about twice that of British America, a region nearly equal in extent to two-thirds of the continent of Europe. It is also said to contain more Scotsmen than are in Edinburgh, more Irishmen than are in Dublin, more Jews than are in the whole land of Palestine, and more Roman Catholics than are in Rome itself.—In Scotland, two-fifths of the people are found in the cities and burghs; every *second* person dwells in a town or large village; one in every *four* in a city of more than 70,000 inhabitants; and fully one in every *eight* is a residenter in the city of Glasgow, which contains a population one-half more than Scotland north of the line of the Caledonian Canal.—In France, where so many of the inhabitants are engaged in agriculture, only about one-third reside in towns. The influence which Paris has gained over the rest of the country is so great that it has almost become proverbial that “Paris is France.” This influence has been well illustrated by the history of the last eighty years, during which the government has been *three* times changed, mainly by the exertions of the Parisians. In 1814, when Napoleon saw that Paris was in the power of his enemies, he gave up his cause as hopeless, and agreed to abdicate.—The most thickly peopled country in Europe, and the most abundant in towns, is Belgium; to which the exclamation made by Philip II. of Spain nearly three centuries ago is still applicable—“(This is one large town.)”

giving the
town.

WESTMINSTER ABBEY.

TREAD lightly here! this spot is holy ground,

§ And every footfall wakes the voice of ages :

These are the mighty dead, that hem thee round,

Names that still cast a halo o'er our pages :

39 Listen! 'tis Fame's loud voice that now complains,—

"Here sleeps more sacred dust than all the world contains."

Thou mayst bend o'er each marble semblance now :

That was a monarch,—see how mute he lies !

There was a day when, on his crumbling brow,

The golden crown flashed awe on vulgar eyes ;

That broken hand did then a sceptre sway,

And thousands round him kneeled, his mandates to obey.

Turn to the time when he thus low was laid

Within this narrow house, in proud array :

Dirges were sung, and solemn masses said,

And high-plumed helms bent o'er him as he lay ;

Princes and peers were congregated here,

And all the pomp of Death assembled round his bier.

Then did the midnight torches flaming wave,

And redly flashed athwart the vaulted gloom ;

And white-robed boys sang requiems o'er his grave ;

And muttering monks kneeled lowly round his tomb ;

And lovely women did his loss deplore,

And with their gushing tears bathed the cold marble floor.

See ! at his head a rude-carved lion stands,

In the dark niche where never sunbeams beat ;

And still he folds his supplicating hands :

A watchful dragon crouches at his feet,—

How oddly blended!—he all humble lies,

While they defiance cast from their fierce, stony eyes.

Here sleeps another, clothed in scaly mail ;
 Battle's red field was where he loved to be ;
 Oft has his banner rustled in the gale,
riches [In all the pomp of blazing heraldry !]
 Where are his bowmen now, his shield and spear,
 His steed and battle-axe, and all he once held dear ?

His banner wasted on the castle wall ;
 His lofty turrets sunk by slow decay ;
 His bowmen in the beaten field did fall ;
 His plated armour rust hath swept away ;
everything His plumes are scattered, and his helmet cleft,
 And this slow-crumbling tomb is all he now hath left.

And this is fame ! (For this he fought and bled !)
 See his reward !—No matter ; let him rest ;
is gone Vacant and dark is now his ancient bed,
 The dust of ages dims his marble breast ;
 And in that tomb what thinkest thou remains ?
 Dust !—'tis the only glory that on earth man gains.

*And I thought
riches
riches
riches* And kings and queens here slumber side by side,
 Their quarrels hushed in the embrace of Death ;

*riches
riches
riches* All feelings calmed of jealousy or pride,
 Once fanned to flame by Slander's burning breath ;—
 Even the crowns they wore from cares are free,
 As those on children's heads who play at royalty.

And awful Silence here does ever linger ;
 Her dwelling is this many-pillared dome :
 On her wan lip she plants her stony finger,
 And, breath-hushed, gazes on her voiceless home ;
 Listening, she stands with half averted head,
 For echoes never heard among the mute-tongued dead.

THOMAS MILLER.

OUR ENGLISH BIBLE.*

ONE Sunday in February 1526, the great Wolsey sat in old St. Paul's under a canopy of cloth of gold. His robe was purple; scarlet gloves blazed on his hands; and golden shoes glittered on his feet. A magnificent array of satin and damask gowned priests encircled his throne; and the gray head of old Bishop Fisher—soon to roll bloody on a scaffold—appeared in the pulpit of the place. Below that pulpit stood rows of baskets, piled high with books, the plunder of London and the university towns. (These were Tyndale's Testaments, ferreted out by the emissaries of the cardinal, who had swept every cranny in search of the hated thing. 42) None there fresh from the printer's hand—all well-thumbed volumes, scored with many a loving mark, and parted from with many bitter tears! Outside the gate before the great cross there burned a fire, hungering and leaping for its prey. When the sermon was over, men, who loved to read these books, were forced, with a refinement of cruelty, to throw the precious volumes into the flames, while the cardinal and his prelates stood looking at the pleasant show, until the last sparks died out in the great heaps of tinder; and then the gorgeous crowd went home to supper, rejoicing in their work of destruction. (Poor misguided men! to think that the burning of a few shreds of paper and scraps of leather, 43) could destroy the words of eternal truth!)

Scenes like this occurred more than once at St. Paul's Cross; yet the Bible lived—was revised and translated with more untiring industry than ever.

Fifteen years after the burning thus described, and five years after the body of Tyndale had perished like his books in the flames, a royal order was issued, commanding a copy of the Bible to be placed in every church, where the people might read or hear it freely. Gladly was the boon welcomed; young and old flocked in crowds to drink of the now unsealed fountain of life. (Then was often beheld, within the gray crypt of St. Paul's, a scene which

* From "History of English Literature, in a Series of Biographical Sketches." By W. F. Collier, LL.D. (*Nelson's School Series.*)

14 a distinguished living artist has made the subject of a noble picture.) The Great Bible, chained to one of the solid pillars which upheld the arches of the massive roof, (lay open upon a desk.) Before it stood a reader, chosen for his clear voice and fluent elocution; and, as leaf after leaf was turned, the breathless hush of the listening crowd grew deeper. Gray-headed old men and beautiful women, mothers with their children beside them and maidens in the young dawn of womanhood, merchants from their stalls and courtiers from the palace, beggary and disease crawling from the fetid alleys, stood still to hear; while, in the dim (back-ground,) men who, if they had dared, would have torn the sacred book to tatters and trampled it in the dust, looked sourly on.

christianity This dear privilege of hearing the Bible at church, or reading it at home, so much prized by the English people then, was snatched from them again by their cruel and fickle king.) But in 1547 the tyrant died, and during the reign of the gentle boy Edward Bible-reading was restored. Under Elizabeth the Bible was finally reestablished as the great standard of our national faith. Two editions, appearing before that translation which *we* use, may be noted; — the Geneva Bible, so dear to the Puritans, finished in 1560 by Miles Coverdale and other exiles who were driven from England by the flames of persecution; and the Bishop's Bible of 1568, a translation superintended by Matthew Parker, Archbishop of Canterbury, who was aided by the first scholars of that learned age.

45 Then came the translation which we still use, and to which most of us cling with unchanging love, in spite of the occasional little flaws which the light of modern learning has discovered. (How tame and cold the words of that Book, entwined as they are with the memory of earliest childhood, would fall upon our ear if rendered into the English in which we speak our common words and read our common books!)

57 Within an oak-panelled and tapestried room of that splendid palace which Wolsey built at Hampton by the Thames, King James the First, most pedantic of our English monarchs, sat enthroned among an assembly of divines, who were met in conference upon the religious affairs of the kingdom. It was then little more than

nine months after his accession to the English throne, and he took his seat resolved to teach the Puritan doctors that in him they had to deal with a prince of logicians and a master in theology. (There were present, to back the wisdom of the British Solomon and applaud his eloquence,) some twenty bishops and high clergy of the Church of England, the lords of the Privy Council, and many courtiers; while to speak in the cause of needed change there were only four—two doctors from Oxford, and two from Cambridge. It would be out of place here to describe how, during the three days of conference, amid the titters of the courtiers and the gratified smiles of the clergy, the conceited king called the Puritan doctors “dunces fit to be whipped,” and indulged in other similar flights of his peculiar style of oratory.) The scene, ridiculous in most respects, is memorable to us, because it led to the publication of our English Bible. (During one of the pauses of the fusillade,) when the royal orator was out of breath, Dr. Reynolds proposed a new version of the Scriptures; and James saw fit, by-and-by, to yield his gracious consent. *Like James he stooped in his burst of oratory.*

Fifty-four scholars were appointed to the great work, but only forty-seven of these actually engaged in the translation. Taking the Bishop's Bible as the basis of the new version, they set to their task in divisions, Oxford, Cambridge, and Westminster being the centres of their labour; and, often meeting to compare notes and correct one another's manuscripts, they completed their translation in about three years. Our Bible was therefore published, with a dedication to King James, in the year 1611.

[The English of the Bible is unequalled in the full range of our literature. Whether we take the subtle argument of Paul's Epistles, the sublime poetry of Job and the Psalms, the beautiful imagery of the Parables, the simple narrative of the Gospels, the magnificent eloquence of Isaiah, or the clear, plain histories of Moses and Samuel, but one impression deepens as we read, and remains as we close the volume,—that, without regard to its infinite greatness as the written word of God, taken simply as a literary work, there is no English book like our English Bible.]

PART III.

HOME AND COUNTRY SCENES.

THE SKY-LARK.

BIRD of the wilderness,
Blithesome and cumberless,
Sweet be thy matin o'er moorland and lea!
Emblem of happiness,
Blest is thy dwelling-place—
O to abide in the desert with thee!

Wild is thy lay and loud,
Far in the downy cloud;
Love gives it energy, love gave it birth
Where on thy dewy wing,
Where art thou journeying?
Thy lay is in heaven, thy love is on earth.

O'er fell and fountain sheen,
O'er moor and mountain green,
O'er the red streamer that heralds the day;
Over the cloudlet dim,
Over the rainbow's rim,
Musical cherub soar, singing away!

Then, when the gloaming comes,
Low in the heather blooms,
Sweet will thy welcome and bed of love be!
Emblem of happiness,
Blest is thy dwelling-place—
O to abide in the desert with thee!

JAMES HOGG.

AN ENGLISH PEASANT.

To pomp and pageantry in nought allied,
A noble peasant, Isaac Ashford, died.
Noble he was, contemning all things mean,
His truth unquestioned and his soul serene.
Of no man's presence Isaac felt afraid;
At no man's question Isaac looked dismayed:
Shame knew him not, he dreaded no disgrace;
Truth, simple truth, was written in his face.
Yet while the serious thought his soul approved,
Cheerful he seemed, and gentleness he loved;
To bliss domestic he his heart resigned,
And with the firmest, had the fondest mind.
Were others joyful, he looked smiling on,
And gave allowance where he needed none;
Good he refused with future ill to buy,
Nor knew a joy that caused reflection's sigh.
A friend to virtue, his unclouded breast
No envy stung, no jealousy distressed;—
Bane of the poor! it wounds their weaker mind,
To miss one favour which their neighbours find.
Yet far was he from Stoic pride removed;
He felt humanely, and he warmly loved:
I marked his action when his infant died,
And his old neighbour for offence was tried;
The still tears, stealing down that furrowed cheek,
Spoke pity plainer than the tongue can speak.
If pride was his, 'twas not their vulgar pride,
Who, in their base contempt, the great deride;
Nor pride in learning, though my clerk agreed,
If fate should call him, Ashford might succeed;
Nor pride in rustic skill, although we knew
None his superior, and his equals few:
But if that spirit in his soul had place,
It was the jealous pride that shuns disgrace;

A pride in honest fame, by virtue gained,
 In sturdy boys to virtuous labours trained;
 Pride in the power that guards his country's coast,
 And all that Englishmen enjoy and boast;
 Pride in a life that slander's tongue defied,—
 In fact, a noble passion, misnamed pride.
 I feel his absence in the hours of prayer,
 And view his seat, and sigh for Isaac there;
 I see no more those white locks thinly spread
 Round the bald polish of that honoured head;
 No more that awful glance on playful wight,
 Compelled to kneel and tremble at the sight,
 To fold his fingers all in dread the while,
 Till Master Ashford softened to a smile;
 No more that meek and suppliant look in prayer,
 Nor the pure faith, (to give it force,) are there;—
 But he is blessed, and I lament no more,
 A wise, good man, contented to be poor.

GEORGE CRABBE.

THE HOLLY TREE.

O READER! hast thou ever stood to see
 The holly tree?
 The eye that contemplates it well, perceives
 Its glossy leaves,
 Ordered by an intelligence so wise
 As might confound the atheist's sophistries.

 Below, a circling fence, its leaves are seen
 Wrinkled and keen,—
 No grazing cattle, through their prickly round,
 Can reach to wound;
 But as they grow where nothing is to fear,
 Smooth and unarmed the pointless leaves appear.

I love to view these things with curious eyes,
And moralize;
And in this wisdom of the holly tree
Can emblems see
Wherewith, perchance, to make a pleasant rhyme,—
One which may profit in the after-time.

Thus, though abroad, perchance, I might appear
Harsh and austere;
To those who on my leisure would intrude,
Reserved and rude;
Gentle at home amid my friends I'd be,
Like the high leaves upon the holly tree.

And should my youth, as youth is apt, I know,
Some harshness show,
All vain asperities I day by day
Would wear away,
Till the smooth temper of my age should be
Like the high leaves upon the holly tree.

And as, when all the summer trees are seen
So bright and green,
The holly leaves their fadeless lines display
Less bright than they;
But when the bare and wintry woods we see,
What then so cheerful as the holly tree!

So serious should my youth appear among
The thoughtless throng;
So would I seem, amid the young and gay,
More grave than they;
That in my age as cheerful I might be
As the green winter of the holly tree.

ROBERT SOUTHEY

THE FOUR ERAS.

THE lark has sung his carol in the sky ;
The bees have hummed their noontide harmony ;
Still in the vale the village bells ring round,
Still in Llewellyn Hall the jests resound :
For now the caudle-cup is circling there ;
Now, glad at heart, the gossips breathe their prayer,
And, crowding, stop the cradle to admire
The babe, the sleeping image of his sire.

A few short years, and then these sounds shall hail
The day again, and gladness fill the vale ;
So soon the child a youth, the youth a man,
Eager to run the race his fathers ran.
Then the huge ox shall yield the broad sirloin ;
The ale, now brewed, in floods of amber shine ;
And, basking in the chimney's ample blaze,
'Mid many a tale told of his boyish days,
The nurse shall cry, of all her ills beguiled,
" 'Twas on these knees he sate so oft and smiled."

And soon again shall music swell the breeze ;
Soon, issuing forth, shall glitter through the trees
Vestures of nuptial white ; and hymns be sung,
And violets scattered round ; and old and young,
In every cottage porch, with garlands green,
Stand still to gaze, and, gazing, bless the scene ;
While, her dark eyes declining, by his side
Moves in her virgin-veil the gentle bride.

And once, alas ! nor in a distant hour,
Another voice shall come from yonder tower ;
When in dim chambers long black weeds are seen,
And weepings heard where only joy has been ;
When by his children borne, and from his door
Slowly departing, to return no more,
He rests in holy earth with them that went before.

THE DESERTED VILLAGE.

SWEET Auburn ! loveliest village of the plain,
Where health and plenty cheered the labouring swain ;
Where smiling spring its earliest visit paid,
And parting summer's lingering blooms delayed ;
Dear lovely bowers of innocence and ease,
Seats of my youth, when every sport could please ;
How often have I loitered o'er thy green,
Where humble happiness endeared each scene !
How often have I paused on every charm ;—
The sheltered cot, the cultivated farm,
The never-failing brook, the busy mill,
The decent church that topped the neighbouring hill ;
The hawthorn bush, with seats beneath the shade,
For talking age and whispering lovers made !
How often have I blessed the coming day,
When toil, remitting, lent its turn to play ;
And all the village train, from labour free,
Led up their sports beneath the spreading tree ;
While many a pastime circled in the shade,
The young contending, as the old surveyed ;
And many a gambol frolicked o'er the ground,
And sleights of art and feats of strength went round ;
And still, as each repeated pleasure tired,
Succeeding sports the mirthful band inspired :—
The dancing pair, that simply sought renown
By holding out to tire each other down ;
The swain, mistrustless of his smutted face,
While secret laughter tittered round the place ;
The bashful virgin's sidelong looks of love ;
The matron's glance that would those looks reprove ;—
These were thy charms, sweet village ! sports like these,
With sweet succession, taught e'en toil to please.
Sweet was the sound, when oft, at evening's close,
Up yonder hill the village murmur rose ;

There as I passed, with careless steps and slow,
The mingling notes came softened from below :—
The swain, responsive as the milk-maid sung;
The sober herd, that lowed to meet their young;
The noisy geese, that gabbled o'er the pool;
The playful children, just let loose from school;
The watch-dog's voice, that bayed the whispering wind;
And the loud laugh, that spoke the vacant mind ;—
These all, in sweet confusion, sought the shade,
And filled each pause the nightingale had made.

GOLDSMITH

THE VILLAGE PREACHER.

NEAR yonder copse, where once the garden smiled,
And still where many a garden flower grows wild,
There, where a few torn shrubs the place disclose,
The village preacher's modest mansion rose.
A man he was to all the country dear,
And passing rich with forty pounds a year;
Remote from towns he ran his godly race,
Nor e'er had changed, nor wished to change, his place;
Unskilful he to fawn, or seek for power,
By doctrines fashioned to the varying hour;
Far other aims his heart had learned to prize,
More bent to raise the wretched than to rise.
His house was known to all the vagrant train;
He chid their wand'rings, but relieved their pain.
The long-remembered beggar was his guest,
Whose beard descending swept his aged breast;
The ruined spendthrift, now no longer proud,
Claimed kindred there, and had his claims allowed;
The broken soldier, kindly bade to stay,
Sat by his fire, and talked the night away,
Wept o'er his wounds, or, tales of sorrow done,
Shouldered his crutch, and showed how fields were won !

Pleased with his guests, the good man learned to glow,
And quite forgot their vices, in their woe;
Careless their merits or their faults to scan,
His pity gave, ere charity began.

Thus to relieve the wretched was his pride,
And even his failings leaned to virtue's side;
But, in his duty prompt at every call,
He watched and wept, he prayed and felt for all:
And, as a bird each fond endearment tries
To tempt her new-fledged offspring to the skies,
He tried each art, reproved each dull delay,
Allured to brighter worlds, and led the way.

Beside the bed where parting life was laid,
And sorrow, guilt, and pain, by turns dismayed,
The reverend champion stood. At his control,
Despair and anguish fled the struggling soul;
Comfort came down the trembling wretch to raise,
And his last faltering accents whispered praise.

At church, with meek and unaffected grace,
His looks adorned the venerable place;
Truth from his lips prevailed with double sway;
And fools, who came to scoff, remained to pray.
The service past, around the pious man,
With ready zeal, each honest rustic ran;
Even children followed with endearing wile,
And plucked his gown, to share the good man's smile:
His ready smile a parent's warmth expressed,
Their welfare pleased him, and their cares distressed;
To them his heart, his love, his griefs were given,
But all his serious thoughts had rest in heaven:
As some tall cliff, that lifts its awful form,
Swells from the vale, and midway leaves the storm;
Though round its breast the rolling clouds are spread,
Eternal sunshine settles on its head.

GOLDSMITH

ON THE RECEIPT OF MY MOTHER'S PICTURE.

Oh that those lips had language! Life has passed
With me but roughly since I heard thee last.
Those lips are thine—thy own sweet smile I see,
The same that oft in childhood solaced me.

My mother! when I learned that thou wast dead,
Say, wast thou conscious of the tears I shed?
Hovered thy spirit o'er thy sorrowing son,
Wretch even then, life's journey just begun?
Perhaps thou gav'st me, though unfelt, a kiss;
Perhaps a tear, if souls can weep in bliss—
Ah, that maternal smile! it answers, Yes!
I heard the bell tolled on thy burial-day;
I saw the hearse that bore thee slow away;
And, turning from my nursery window, drew
A long, long sigh, and wept a last adieu!
But was it such?—It was. Where thou art gone
Adieus and farewells are a sound unknown.
May I but meet thee on that peaceful shore,
The parting word shall pass my lips no more!
Thy maidens, grieved themselves at my concern,
Oft gave me promise of thy quick return.
By expectation every day beguiled,
Dupe of to-morrow even from a child,
Thus many a sad to-morrow came and went,
Till, all my stock of infant sorrow spent,
I learned at last submission to my lot;—
But, though I less deplored thee, ne'er forgot.

Where once we dwelt, our name is heard no more,—
Children not thine have trod my nursery floor;
And where the gard'ner, Robin, day by day,
Drew me to school along the public way,
Delighted with my bauble coach, and wrapt
In scarlet mantle warm, and velvet-capt,

'Tis now become a history little known,
That once we called the pastoral-house our own.
Short-lived possession! but the record fair,
That memory keeps of all thy kindness there,
Still outlives many a storm that has effaced
A thousand other themes less deeply traced.
Thy nightly visits to my chamber made,
That thou mightst know me safe and warmly laid;
Thy morning bounties ere I left my home—
The biscuit, or confectionery plum;
The fragrant waters on my cheeks bestowed
By thy own hand, till fresh they shone and glowed ;—
All this, and, more endearing still than all,
Thy constant flow of love, that knew no fall,
Ne'er roughened by those cataracts and breaks
That humour interposed too often makes,—
And this still legible in memory's page,
And still to be so to my latest age,—
Adds joy to duty, makes me glad to pay
Such honours to thee as my numbers may;
Perhaps a frail memorial, but sincere,—
Not scorned in heaven, though little noticed here.

My boast is not that I deduce my birth
From loins enthroned and rulers of the earth;
But higher far my proud pretensions rise—
The son of parents passed into the skies.
And now, farewell—Time unrevoked has run
His wonted course, yet what I wished is done.
By Contemplation's help, not sought in vain,
I seem to have lived my childhood o'er again;—
To have renewed the joys that once were mine,
Without the sin of violating thine;
And while the wings of fancy still are free,
And I can view this mimic show of thee,
Time has but half succeeded in his theft—
Thyself removed, thy power to soothe me left. COWPER.

ELEGY WRITTEN IN A COUNTRY CHURCHYARD.

THE curfew tolls the knell of parting day,
The lowing herd winds slowly o'er the lea,
The ploughman homeward plods his weary way,
And leaves the world to darkness and to me.

Now fades the glimmering landscape on the sight,
And all the air a solemn stillness holds,
Save where the beetle wheels his droning flight,
And drowsy tinklings lull the distant folds;—

Save that from yonder ivy-mantled tower
The moping owl does to the moon complain
Of such as, wandering near her secret bower,
Molest her ancient solitary reign.

Beneath those rugged elms, that yew tree's shade,
Where heaves the turf in many a mouldering heap,
Each in his narrow cell for ever laid,
The rude forefathers of the hamlet sleep.

The breezy call of incense-breathing morn,
The swallow twittering from the straw-built shed,
The cock's shrill clarion, or the echoing horn,
No more shall rouse them from their lowly bed.

For them no more the blazing hearth shall burn,
Or busy housewife ply her evening care:
No children run to lisp their sire's return,
Or climb his knees the envied kiss to share.

Oft did the harvest to their sickle yield,
Their furrow oft the stubborn glebe has broke;
How jocund did they drive their team a-field!
How bowed the woods beneath their sturdy stroke!

Let not Ambition mock their useful toil,
Their homely joys, and destiny obscure;

Nor Grandeur hear with a disdainful smile
The short and simple annals of the poor.

The boast of heraldry, the pomp of power,
And all that beauty, all that wealth e'er gave,
Await alike the inevitable hour :—
The paths of glory lead but to the grave.

Nor you, ye proud, impute to these the fault,
If Memory o'er their tomb no trophies raise,
Where through the long-drawn aisle and fretted vault
The pealing anthem swells the note of praise.

Can storied urn or animated bust
Back to its mansion call the fleeting breath ?
Can Honour's voice provoke the silent dust,
Or Flattery soothe the dull cold ear of Death ?

Perhaps in this neglected spot is laid
Some heart once pregnant with celestial fire ;
Hands that the rod of empire might have swayed,
Or waked to ecstasy the living lyre.

But Knowledge to their eyes her ample page,
Rich with the spoils of time, did ne'er unroll ;
Chill Penury repressed their noble rage,
And froze the genial current of the soul.

Full many a gem, of purest ray serene,
The dark unfathomed caves of ocean bear :
Full many a flower is born to blush unseen,
And waste its sweetness on the desert air.

Some village Hampden, that with dauntless breast
The little tyrant of his fields withstood ;
Some mute inglorious Milton, here may rest,—
Some Cromwell, guiltless of his country's blood.

The applause of listening senates to command,
The threats of pain and ruin to despise,

To scatter plenty o'er a smiling land,
And read their history in a nation's eyes,
Their lot forbade: nor circumscribed alone
Their growing virtues, but their crimes confined;—
Forbade to wade through slaughter to a throne,
And shut the gates of Mercy on mankind;
The struggling pangs of conscious truth to hide,
To quench the blushes of ingenuous shame,
Or heap the shrine of Luxury and Pride
With incense kindled at the Muse's flame.
Far from the madding crowd's ignoble strife,
Their sober wishes never learned to stray;
Along the cool sequestered vale of life
They kept the noiseless tenor of their way.
Yet even these bones from insult to protect,
Some frail memorial still erected nigh,
With uncouth rhymes and shapeless sculpture decked,
Implores the passing tribute of a sigh.
Their name, their years, spelt by the unlettered Muse,
The place of fame and elegy supply;
And many a holy text around she strews,
That teach the rustic moralist to die.
For who to dumb Forgetfulness a prey,
This pleasing, anxious being, e'er resigned;
Left the warm precincts of the cheerful day,
Nor cast one longing, lingering look behind?
On some fond breast the parting soul relies,
Some pious drops the closing eye requires;
Even from the tomb the voice of Nature cries,—
Even in our ashes live their wonted fires.
For thee, who, mindful of the unhonoured dead,
Dost in these lines their artless tale relate;

If chance, by lonely Contemplation led,
Some kindred spirit shall inquire thy fate,
Haply some hoary-headed swain may say,
"Oft have we seen him at the peep of dawn
Brushing with hasty steps the dews away,
To meet the sun upon the upland lawn.
"There, at the foot of yonder nodding beech,
That wreathes its old fantastic roots so high,
His listless length at noontide would he stretch,
And pore upon the brook that babbles by.
"Hard by yon wood, now smiling as in scorn,
Muttering his wayward fancies he would rove;
Now drooping, woful, wan, like one forlorn,
Or crazed with care, or crossed in hopeless love.
"One morn I missed him on the 'customed hill,
Along the heath and near his favourite tree;
Another came, nor yet beside the rill,
Nor up the lawn, nor at the wood was he;
"The next, with dirges due in sad array
Slow through the church-way path we saw him borne:
Approach and read (for thou canst read) the lay
Graved on the stone beneath yon aged thorn."

THE EPITAPH

*Here rests his head upon the lap of Earth,
A youth, to Fortune and to Fame unknown;
Fair Science frowned not on his humble birth,
And Melancholy marked him for her own.
Large was his bounty, and his soul sincere;
Heaven did a recompence as largely send:
He gave to Misery all he had, a tear;
He gained from Heaven ('twas all he wished), a friend.
No further seek his merits to disclose,
Or draw his frailties from their dread abode,
(There they alike in trembling hope repose),—
The bosom of his Father and his God.*

GRAY.

THE COTTER'S SATURDAY NIGHT.

THE cheerfu' supper done, wi' serious face,
 They round the ingle form a circle wide;
 The sire turns o'er, wi' patriarchal grace,
 The big Ha'-Bible, ance his father's pride:
 His bonnet rev'rently is laid aside,
 His lyart* haffets wearin' thin and bare;
 Those strains that once did sweet in Zion glide,
 He wales† a portion with judicious care;
 And "Let us worship God," he says, wi' solemn air.

They chant their artless notes in simple guise;
 They tune their hearts—by far the noblest aim:
 Perhaps Dundee's wild warbling measures rise,
 Or plaintive Martyrs, worthy o' the name,
 Or noble Elgin,‡ beets§ the heavenward flame,—
 The sweetest far of Scotia's holy lays:
 Compared with these, Italian trills are tame;
 The tickled ears no heartfelt raptures raise;
 Nae unison hae they with our Creator's praise.

The priest-like father reads the sacred page,
 How Abraham was the friend of God on high;
 Or, Moses bade eternal warfare wage
 With Amalek's ungracious progeny;
 Or how the royal bard did groaning lie
 Beneath the stroke of Heaven's avenging ire;
 Or Job's pathetic plaint and wailing cry;
 Or rapt Isaiah's wild seraphic fire;
 Or other holy seers that tune the sacred lyre.

Perhaps the Christian volume is the theme,—
 How guiltless blood for guilty man was shed;

* gray. † chooses. ‡ Dundee, Martyrs, Elgin, names of psalm-tunes. § helps.

How He who bore in heaven the second name
Had not on earth whereon to lay his head;
How His first followers and servants sped,
The precepts sage they wrote to many a land;
How he, who lone in Patmos banished,
Saw in the sun a mighty angel stand,
And heard great Bab'lon's doom pronounced by Heaven's
command.

Then kneeling down to heaven's eternal King,
The saint, the father, and the husband prays:
Hope "springs exulting on triumphant wing,"
That thus they all shall meet in future days;
There ever bask in uncreated rays,
No more to sigh, or shed the bitter tear,
Together hymning their Creator's praise,
In such society, yet still more dear,
While circling time moves round in an eternal sphere.

Compared with this, how poor Religion's pride,
In all the pomp of method and of art,
When men display to congregations wide,
Devotion's every grace, except the heart!
The Power, incensed, the pageant will desert,
The pompous strain, the sacerdotal stole;
But haply, in some cottage far apart,
May hear, well-pleased, the language of the soul,
And in His book of life the inmates poor enroll.

Then homeward all take off their sev'ral way;
The youngling cottagers retire to rest:
The parent pair their secret homage pay,
And proffer up to Heaven the warm request,
That He who stills the raven's clam'rous nest
And decks the lily fair in flowery pride,

Would, in the way His wisdom sees the best,
For them and for their little ones provide;
But chiefly in their hearts with grace divine preside.

From scenes like these old Scotia's grandeur springs,
That makes her loved at home, revered abroad:
Princes and lords are but the breath of kings,—
"An honest man 's the noblest work of God;"
And certes, in fair virtue's heavenly road,
The cottage leaves the palace far behind.
What is a lordling's pomp?—a cumbrous load,
Disguising oft the wretch of human-kind,
Studied in arts of hell, in wickedness refined!

O Scotia! my dear, my native soil!
For whom my warmest wish to Heaven is sent!
Long may thy hardy sons of rustic toil
Be blessed with health, and peace, and sweet content!
And, oh! may Heaven their simple lives prevent
From luxury's contagion, weak and vile!
Then, howe'er crowns and coronets be rent,
A virtuous populace may rise the while,
And stand, a wall of fire, around their much-loved isle.

O Thou! who poured the patriotic tide
That streamed through Wallace's undaunted heart,
Who dared to nobly stem tyrannic pride,
Or nobly die—the second glorious part,
(The patriot's God peculiarly Thou art,
His friend, inspirer, guardian, and reward!)—
Oh! never, never, Scotia's realm desert,
But still the patriot and the patriot bard
In bright succession raise—her ornament and guard!

BURNS.

THE COTTAGER.

Yon cottager, who weaves at her own door—
Pillow and bobbins all her little store—
Content though mean, and cheerful if not gay,
Shuffling her threads about the live-long day,
Just earns a scanty pittance, and at night
Lies down secure, her heart and pocket light :
She, for her humble sphere by nature fit,
Has little understanding, and no wit,
Receives no praise ; but, though her lot be such,
(Toilsome and indigent), she renders much ;
Just knows, and knows no more, her Bible true—
A truth the brilliant Frenchman * never knew ;
And in that charter reads, with sparkling eyes,
Her title to a treasure in the skies.
O happy peasant !—O unhappy bard !
His the mere tinsel,—hers the rich reward ;
He, praised, perhaps, for ages yet to come,—
She, never heard of half a mile from home ;
He, lost in errors, his vain heart prefers,—
She, safe in the simplicity of hers.

COWPER.

* Voltaire.

PART IV.

THE AGE WE LIVE IN.

MODERN INVENTIONS AND THEIR RESULTS.

modern time
wonderful:
an original
authoritative
authorizing.
emitting-
reforms.
James
enormous power
directing res-
ponsible work
plan
of all guiding
workhouse
factories -
layers hard
ripe.

THE (age in which we live) teems with the marvellous inventions of man. (The early fruits of these inventions warrant us in anticipating from them, as they advance to maturity,) the greatest and most beneficial changes upon society, art, and commerce, throughout the world.) We see Watt's Steam Engine, with its gigantic arm, (guiding the manufactures of millions along the great highways of the land,) and resistlessly conveying the commerce of nations along the greater (highway of the deep.) We everywhere see our countryman's noble invention, regulating the ten thousand looms of our manufactories, (ploughing the deep strata of our firm-set soils, reaping the golden grain of our wide-spread fields,) or gathering (far beneath our feet the not less precious treasures of our coal,) and lime, and iron mines; and as we gaze on the strange and varied scene, we are constrained to ask, (Where is the seer's eye that can yet discover, or the prophet's tongue that can tell, what is to be the amount of the changes that the world is destined to witness, as the result of the invention of the Steam Engine?)

Or we see the Electric Element, that for six thousand years seemed to go forth only (at Heaven's bidding,) and to flash before the human eye as the most awful of God's material agencies, at last arrested in its dread path, and employed to pass on its way as man's most ready and rapid messenger—communicating his thoughts with (a tongue of fire) in a moment of time, in the

twinkling of an eye, to his brother man at the ends of the earth;—now conveying to us war's dread tidings from the shores of the ^{new} Crimea, or the wide-spread plains of India; and now preparing to circulate daily and instantaneously between the Old and New ^{by means of the} Worlds—even though the deep and stormy waters of the Atlantic roll between them—the hourly transactions in the Exchanges of ^{business} London and New York.) And with the results of this one inven-

tion, ever and anon more and more marvellously revealed, we may again unhesitatingly inquire, Who will venture to set bounds to the changes which may ensue over our globe to its furthest limits, and throughout its unnumbered families, from the Electric Telegraph? ^{exhausting really, limited result.}

3 (As we contemplate such inventions, and attempt to anticipate ^{foresee} their results, we are called to form a still more elevated conception ^{idea} than we had previously entertained of the genius of man, by ^{held} whom (such powers of nature) have been discovered and controlled, ^{electricity} and to raise a new song of praise to that God whose "inspiration" ^{experienced} giveth men understanding, ^{there is a spirit in man.}

But there are other most valuable inventions of recent days, which society at large is not so ready to remember; perhaps ^{in the full extent} because they stand less closely connected with the daily pursuits and material enjoyments of the world. Chief among these inventions we venture to class the Telescope and the Microscope. ^{in the last of the present century} What worlds, (vast beyond conception, and by human eye previously altogether unseen, have been brought to view by the ^{instrument} Telescope, as, in the hand of a Newton or Rosse, this instrument ^{large} has swept the face of the sky!—as directed by the mind of ^{observed surface} Adams, or Leverrier, it has revealed a new planet, dwelling (up to that moment) beyond the ken of man in the remotest distance of the limitless universe, and thus achieved a discovery more wonderful, if possible, than when Columbus sought and found a new world beyond the Atlantic wave! ^{again}.)

Not less marvellous than the Telescope is that other instrument which we have named, the Microscope, which reveals to us the minute worlds which lie ever near and around us, and which, but for its use, would never have been disclosed to our view. It is, indeed, hard to say which of these two instruments the Telescope

proved. or the Microscope, has most fully evidenced the powers of man, and most clearly illustrated the perfections of God; for the universe which the Microscope subjects to our ken seems as boundless in its very minuteness as that other universe which, in its magnitude, still eludes the far-searching glance of the Telescope.

When declaring the care of the Almighty and the Infinite One for the smallest as well as the greatest of his creatures, and marking the singularly gracious providence by which the Telescope and the Microscope, that reveal alike the mightiest and the minutest of God's worlds, were invented about the same time, Dr. Chalmers, with equal truth and beauty, says of these instruments:

"The one led me to see a system in every star;—the other leads me to see a world in every atom. The one taught me that this mighty globe, with the whole burden of its people and of its countries, is but a grain of sand on the high field of immensity;—the other teaches me that every grain of sand may harbour within it the tribes and the families of a busy population. The one told me of the insignificance of the world I tread upon;—the other redeems it from all its insignificance; for it tells me that in the leaves of every forest, and in the flowers of every garden, and in the waters of every rivulet, there are worlds teeming with life, and numberless as are the glories of the firmament.) (The one has suggested to me, that, beyond and above all that is visible to man, there may lie fields of creation which sweep immeasurably along, and carry the impress of the Almighty's hand to the remotest scenes of the universe;—the other suggests to me, that, (within and beneath all that minuteness which the aided eye of man has been able to explore, there may lie a region of invisibles;) and that, could we draw aside the mysterious curtain which shrouds them from our senses, we might there see a theatre of as many wonders as astronomy has unfolded, a universe within the compass of a point so small as to elude all the powers of the microscope, but where the wonder-working God finds room for the exercise of all his attributes, where he can raise another mechanism of worlds, and fill and animate them all with the evidences of his glory."

FERGUSON.

LONDON AND ITS FOOD.

If, early on a summer morning, before the smoke of countless fires ^{had confused}
 had narrowed the horizon of the metropolis, a spectator were to ^{in a smaller}
 ascend to the top of St. Paul's, and take his stand upon the balcony, ^{compact there}
 that with gilded rail flashes like a fringe of fire on the summit of ^{the city.}
 the dome, he would see sleeping beneath his feet the greatest ^{metropolis}
 group of men upon which the sun has ever risen. As far as he ^{could}
 could distinguish by the morning light he would behold stretched ^{stretch}
 before him the mighty map of the metropolis; and could he ascend ^{high}
 still higher, he would note the stream of life ^{overflowing the brim}
 of hills which enclose the basin in which it stands. ^{border of the hills.}
 (In the space swept by his vision) would lie the congregated ^{within the basin}
 habitations of two millions and a half of his species,—but (how ^{in a small}
 vain are figures to convey an idea of so immense a multitude!) If ^{Swiss}
 Norway, stretching from the Frozen Ocean down to the southern ^{extending}
 extremity of the North Sea, were to summon all its people to one ^{coastal plain}
 vast conclave, they would number little more than half the souls ^{persons}
 within the London bills of mortality. Switzerland, in her thou- ^{count of}
 sand valleys, could not muster such an army; and even (busy ^{ships}
 Holland, within her mast-thronged harbours, humming cities, and ^{populous}
 populous plains, could barely overmatch the close-packed millions ^{surpass}
 within sound of the great bell at his feet. As the spectator gazed ^{densely}
 upon this extraordinary prospect, the first stir of the awakening ^{city}
 city would gradually steal upon his ear. The rumbling of wheels ^{noise}
 the clang of hammers, the clear call of the human voice, all deep- ^{sound}
 ening by degrees into a confused hum, would proclaim that the ^{mighty}
 mighty city was once more rousing to the labour of the day; and ^{past}
 the blue columns of smoke climbing up to heaven would intimate ^{individual}
 that the morning meal was at hand. At such a moment the ^{idea}
 thought would naturally arise in his mind,—In what manner is ^{such}
 such an assemblage victualled? (By what complicated wheels does ^{all}
 all the machinery move by which two millions and a half of ^{intricate}
 human beings sit down day by day to their meals as regularly ^{mechanically}
 and quietly as though they only formed a snug little party at ^{comfortable}
 Lovegrove's on a summer's afternoon?) As thus he mused respect- ^{new persons}

last animal of the herd would be seventy-two miles away, and the drover ^{pressing} goading his shrinking flank considerably beyond Peter-borough ^{narrowly}. On the other side of the park, as the clouds of dust clear away, we see the Great Western Road, as far as the eye can reach, thronged with a bleating mass of wool, and the shepherd ^{harassing by} at the end of the flock (ten abreast), and the dog that is worrying ^{harassing} the last sheep, are just leaving the environs of Bristol, one hundred ^{boundary} and twenty-one miles from our beer-built pillar. Along Piccadilly, Regent Street, the Strand, Fleet Street, Cheapside, and the eastward Mile End Road line, for seven and a half miles, street and causeway are thronged with calves (still ten abreast); and in the great ^{raised way} parallel thoroughfares of Bayswater Road, Oxford Street, and Holborn, we see nothing for nine long miles but a slowly-pacing, ^{walking slowly} deeply-grunting herd of swine. As we watch this moving mass ^{moving slowly} approaching from all points of the horizon, the air suddenly be- comes dark—a black pall seems drawn over the sky—it is the ^{dothymantle} great flock of birds (game, poultry, and wild-fowl) that are come up to be killed: as they fly wing to wing, and tail to beak, they form a square whose superficies is not much less than the whole ^{birds pursued} enclosed portion of St. James's Park, or fifty-one acres. No sooner ^{birds come} does this huge flight clear away than we behold the park at our ^{birds removed} feet covered with hares and rabbits. Feeding two thousand abreast, they extend from the marble arch to the round pond in Kensington Gardens—at least a mile.

Let us now pile up all the half-quartern loaves consumed in the metropolis in the year, and we shall find they form a pyramid which measures two hundred square feet at its base, and extends into the air a height of one thousand two hundred and ninety-three feet, or nearly three times that of St. Paul's.

Turning now toward the sound of rushing waters, we find that the seven companies are filling the mains for the day. If they ^{rushing} were allowed to flow into the area of the adjacent St. James's Park, they would in the course of the twenty-four hours flood its entire space with a depth of thirty inches of water, and the whole annual supply would be quite sufficient to submerge the City part ^{driven} of London (one mile square) ninety feet.

Of the fish we confess we are able to say nothing: when numbers *300 million* mount to billions, the calculations become (too trying to our *receiving* patience.) We have little doubt, however, that they would be quite sufficient to make the Serpentine one solid mass.) *14 1/2*

Of ham and bacon, again, preserved meats, and all the countless *the whole of the* comestibles, we have taken no account; and, in truth, they are little more to the great mass than the ducks and geese were to *the whole of the* Sancho Panza's celebrated mess—"the skimmings of the pot."

The railways having poured this enormous amount of food into the metropolis, as the main arteries feed the human body, it is distributed by the various dealers into every quarter of the town; first into the wholesale markets, or great centres; then into the sub-centres, or retail shops; and lastly into the moving centres, or barrows of the hawkers: by which means nourishment is poured into every corner of the town, and the community at large is supplied as effectually as are the countless tissues of the human body by the infinitely divided net-work of capillary vessels. These food distributors amount to about 100,000. Among them are no less than 7,000 grocers, nearly 10,000 bakers, and 7,000 butchers.—*Dr. Wynter.*

London is, as a city, in its arrangements and regulations, perhaps the most complete in the world. All seems in the most perfect order; everything in its place, like the brooms, brushes, dusting-cloths of a perfect housekeeper; and for that prime virtue, cleanliness, it is, perhaps, more remarkable than any other. Even the air of London is sweet, save in a few neighbourhoods. The atmosphere is often, indeed, thick with mingled smoke and fog, but the sense of smell is rarely offended; and this is the best evidence of an all-pervading cleanliness. As a remarkable example of arrangement, nothing can be conceived more complete in all its parts than the management of the post-office department in London. Ten times daily all throughout London there is a penny-post delivery of letters; and notes, often scarce bigger than the wax that seals them, are conveyed with exactness and rapidity to and from every street, lane, and alley of the vast metropolis.

the whole of the receiving is as follows: the whole of the receiving is as follows:

the whole of the receiving is as follows: the whole of the receiving is as follows:

thought

THE BANK OF ENGLAND—GOLD, SILVER, AND COPPER.

giving away *substituted* *the earlier stages of society* *the earlier stages of society* *by which men exchange their property with each other, and satisfy their wants by parting with their superfluities.* But in process of time barter is found inconvenient, and consequently almost all nations have introduced the use of what is called Money; that is to say, they have fixed upon some particular substance capable of being divided into small portions, which, although itself possessing little intrinsic value applicable to human use, is nevertheless received as a representative of the value of all commodities. Particular kinds of shells are used as money in some countries; in others, leather, cloth, and iron, are employed; but gold and silver, divided into small portions, are used for this important purpose almost all over the world.

During the reign of Richard Cœur de Lion the first European bank, the Bank of Venice, was established. About a hundred years afterwards, in the reign of Edward I., the Lombards—by which general term the early Italian merchants of Genoa, Florence, and Venice were known—came over and established themselves in the street in London which still bears their name. With them came many of the arts and the skill of trade; with them came the only knowledge of banking then possessed; with them came into more common use “the wonderful invention” of bills of exchange, by the agency of which they remitted money to their own country. Success followed exertion; a firm footing was obtained by the skilful Lombard, who, uniting to the art of the goldsmith the science of the banker, took the initiative in that business which has since been the means of so much good, and which has been found to increase with the trade and commerce of the country.

The Lombards increased in wealth, power, and position. They had gained so much importance by the fifteenth century, that we find them advancing large sums for the service of the State on the security of the customs. *patronage of business support*

*So much
want on the
whole nation
establishment
nearly*

By the middle of the seventeenth century the trade and commerce of the country had increased to such an extent that the necessity of a national bank was universally felt; and in 1694 the Bank of England was established. Its founder was a Scotchman named William Paterson.* This institution is now the great centre of the money business of the world. Its buildings cover a quadrangular space of about four acres, and the number of persons employed is about nine hundred.

*income
a million
the Jones*

Besides issuing notes and carrying on the business of an ordinary bank, to this establishment is intrusted the management of the National Debt, which now amounts to £775,000,000. For this the Bank is allowed about £200,000 a year.

*income
a million
the Jones*

A very large amount of bullion is kept in its vaults, usually from £14,000,000 to £17,000,000. The gold is in bars, each weighing 16 lbs., and worth £800. The silver is also kept in bars, or in bags of dollars.

*current
much*

Notes representing from £18,000,000 to £19,000,000 sterling are usually in circulation. *Lawful money of England*

success

The gold portion of the British coinage is prepared at the Royal Mint, London, and is slightly alloyed with silver and copper, so as to bring it to the exact state called sterling. The whole process of coining is an exceedingly interesting one. The machine for weighing the pieces of gold after they have been cut into the required size is a perfect triumph of mechanism. It separates them into three groups, according as they are too heavy, too light, or the exact weight; but so great is the care taken

*planned
sites
adventures
scottish
west
north
south*

* This remarkable person afterwards projected the celebrated expedition to the Isthmus of Darien, now better known as the Isthmus of Panama; "one of the best situations," says a modern writer, "for a colony from a trading and manufacturing country, on the face of the earth." The same opinion was entertained by Paterson, who had visited the country in his youth, and was thoroughly acquainted with the position and its natural advantages. He proposed to colonize it; but the project was coldly received by the English people, and Paterson appealed to his native country, Scotland. There the scheme was entered into with enthusiasm, and neighbouring nations saw with surprise and respect the poorest country in Europe send forth the most gallant and numerous colony which had ever passed from the Old to the New World. Unhappily, the expedition proved a failure. Disease, famine, and the attacks of the Spaniards, who are said to have been covertly instigated by the English monarch, gradually thinned the ranks of the bold adventurers, and the remnant determined to return home. The expedition appears, indeed, to have been a grand scheme; grand in its conception, grand in its attempted execution, and worthy the mind of that man with whom the idea of the Bank of England originated.

*effort to go forth
to world but*

beforehand, that forty-nine out of every fifty pieces are found fit for coining.

It has been estimated that the total amount of gold in use in the world is about £820,000,000, weighing 8,542 tons. Great as this amount seems, it could all be contained in a cubic block of *solid mass* gold measuring twenty-three feet in diameter!

The chief supplies of gold are now obtained from Australia and California.

Gold is most generally found in the form of small grains, mixed with the sand and mud of rivers. It is also found in crystals, combined with quartz, from which it is separated by *crushing and washing* and *quicksilver* removed by the aid of *quicksilver*, which dissolves it in the same manner as water dissolves sugar. It is afterwards separated from the quicksilver by a process of distillation, being subjected to a *distillation* high degree of heat in a *retort* *a vessel to heat*.

Gold is the most ductile of all metals. One grain of it may be *drawn out* drawn out into 500 feet of wire; and it is so malleable that it may be beaten out into a sheet or leaf less than one 250,000th of an inch in thickness. Unlike iron or steel, it does not tarnish *subly* from exposure to the air.

Silver is the whitest of all metals. It ranks next to gold in ductility and malleability. It is harder than gold, and softer than copper. The addition of a small quantity of copper increases its hardness; and in this state it is used for coinage,—there being 111 parts of silver and nine of copper in all our silver coins.

The most valuable silver mines are in Mexico and South America. Sometimes large masses of pure silver are found, but the chief produce of the mines is obtained by extracting the metal from the ore by a process of crushing, roasting, washing, and refining, similar to that employed with gold and other metals. *common metal*

Copper derives its name from *Cyprus*, where it is supposed to have been first obtained.

This metal was known in the earliest ages of the world, and was applied to a vast number of purposes for which iron is now used, and is better adapted. At a very early period it was used to make

adapted.
instruments of war and of industry; and though, from its softness, it was not the best calculated for these purposes, yet it was better than flint, and other hard stones, which had previously been used by ancient tribes.

True heavy alloy of copper & tin.
The earliest inhabitants of Britain of whom we have any authentic account wore massive rings of copper or bronze upon their arms and legs, but whether of native manufacture or imported is not known.

composed of metal.
The chief source of our copper is Cornwall, a county celebrated from remote antiquity for its valuable tin mines. The value of its copper ore only became known in the fifteenth century. The annual value of the copper raised in Cornwall is now about a million sterling.

forming articles of use.
Copper is sometimes found in a metallic state so pure as to be used for manufacturing purposes. There are examples of this in the mines of Lake Superior, in America, where occasionally large masses of metallic copper have been found weighing several tons. Generally, however, copper is produced from ore by smelting.

It is a curious fact that nearly all the ore raised from the mines of Cornwall and Devon is smelted at Swansea, in South Wales, owing to the abundance of coal there,—it being cheaper to take the ore to the coal than the coal to the ore.

to displace
Bronze, a mixture of copper and tin, is now the metal used to supersede the old copper coinage of this country.

THE ROYAL EXCHANGE.

to visit often
inward pleasure
degree I feel
advised to see
of London
as individual
interest in city
of country
the meeting
important
activities
mercantile agents.
THERE is no place in town which I so much love to frequent as the Royal Exchange. It gives me a secret satisfaction, and in some measure gratifies my vanity, as an Englishman, to see so rich an assembly of my countrymen and foreigners consulting together upon the private business of mankind, and making this metropolis a kind of emporium for the whole earth. I must confess I look upon High Change to be a grand council, in which all considerable nations have their representatives. [Factors, in the trading

world, are what ambassadors are in the politic world.) They negotiate affairs, conclude treaties, and maintain a good correspondence ^{relating to state} between those wealthy societies of men that are divided from one another by seas and oceans, or live on the different extremities of a continent. I have often been pleased to hear disputes adjusted between an inhabitant of Japan and an alderman of London; or to see a subject of the Great Mogul entering into a league with one of the Czar of Muscovy. I am infinitely delighted in mixing with these several ministers of commerce, as they are distinguished by their different walks and different languages. Sometimes I am jostled among a body of Armenians; sometimes I am lost in a crowd of Jews; and sometimes I make one in a group of Dutch men. I am a Dane, a Swede, or Frenchman, at different times; or rather fancy myself like the old philosopher, who, upon being asked what countryman he was, replied that he was a citizen of the world.)

Nature seems to have taken a particular care to disseminate her blessings among the different regions of the world with an eye to this mutual intercourse and traffic among mankind, that the natives of the several parts of the globe might have a kind of dependence upon one another, and be united together by their common interests. Almost every country produces something peculiar to itself. The food often grows in one country and the sauce in another. (The fruits of Portugal are corrected by the products of Barbadoes; the infusion of a China plant is sweetened with the pith of an Indian cane.) The Philippine Islands give a flavour to our European bowls. The single dress of a woman of quality is often the product of a hundred climates. The muff and the fan come together from the different ends of the earth. The scarf is sent from the torrid zone, and the tippet from beneath the pole. The brocade petticoat rises out of the mines of Peru, and the diamond necklace out of the bowels of Hindustan.

Our ships are laden with the harvest of every climate; our tables are stored with spices, and oils, and wines; our rooms are filled with pyramids of china, and adorned with the workmanship of Japan;—our morning's draught comes to us from the remotest

Things drawn covering of bed
 corners of the earth; (we repair our bodies by the drugs of America,) and repose ourselves under Indian canopies. My friend Sir Andrew calls the vineyards of France our gardens; the Spice Islands, our hot-beds; the Persians, our silk weavers; and the Chinese, our potters. Nature, indeed, furnishes us with the bare necessities of life, but traffic gives us a great variety of what is useful, and at the same time supplies us with everything that is convenient and ornamental. (Nor is it the least part of this our happiness,) that, while we enjoy the remotest products of the north and south, we are free from those extremities of weather which give them birth; that our eyes are refreshed with the green fields of Britain at the same time that our palates are feasted with fruits that rise between the tropics. *grow with*

public reciprocal intercourse changes
 For these reasons there are no more useful members in a commonwealth than merchants. They knit mankind together in a mutual intercourse of good offices, distribute the gifts of nature, find work for the poor, add wealth to the rich, and magnificence to the great. Our English merchant converts the tin of his own country into gold, and exchanges his wool for rubies. The Mohammedans are clothed in our British manufacture, and the inhabitants of the frozen zone warmed with the fleeces of our sheep. *woolen cloths*

ADDISON.

a centre British abundance
 The first Royal Exchange was built by Sir Thomas Gresham, in the reign of Elizabeth, and presented by him to his fellow-merchants. This structure was destroyed by the great fire of London in 1666. Three years afterwards the second Exchange was opened. This building was also destroyed by fire, in 1838, one hundred and sixty-nine years after its erection. The present Royal Exchange, which occupies the site of the first, was opened by Queen Victoria in 1844. On the west front of this building, the head-quarters of London commerce, is carved in stone the appropriate motto,—“The earth is the Lord’s, and the fulness thereof.”

COAL.

"The distribution of the coal fields in Britain at once indicates ^{indications} the seats of manufacturing industry. There are large districts ^{regions} both in England and Scotland incapable of affording employment ^{employment} and subsistence to a numerous population, from the want of coal. ^{support-} These districts are either occupied as the scenes of agricultural ^{absence} labours, or are surrendered to sheep and deer. On the contrary, the ^{scenes of} central counties of England and Scotland are also the busy centres ^{for pasture} of the population. From its proximity to a mere patch of the ^{poor} English coal measures, a detached portion not exceeding the area ^{not} of one of the larger Scottish lakes, Birmingham has risen to the ^{not separated} rank of the first iron manufacturing town in the world. Manchester and Glasgow have equally derived their manufacturing and ^{grown} commercial importance from being placed in the centre of a great coal basin. (The economical and industrial importance of ^{field} the union of coal and iron in this island cannot be over-estimated. ^{valued too highly} To their abundance and accessibility in the deposits of the coal ^{getting easily} formation we owe the increase and support of our population, our ^{series} wide-spread mercantile enterprise, our rapid intercourse with all ^{extensive} parts of the world, our boundless territories abroad, our opulence ^{commercial} and influence at home. Who can sum up the benefits we derive ^{wealth} from coal? (It warms and lights our dwellings, cooks our food, ^{from wealth} illuminates our streets.) Coal ^{lightens} develops and sustains the force ^{produces} which ^{keeps up} propels the locomotive along the railway and the ship ^{power} across the sea; works the printing press, ^{possessor} wields the hammer, lifts ^{word by force} the weight, draws the load, moves the machinery, grinds the corn, ^{locomotive} spins the cotton, weaves the cloth, pumps the mine, ^{engine} deepens the river, covers the land with a network of railways, forges the ^{forming} electric wire, and, submerging the ocean telegraph, ^{creating} will throw a ^{geographic} girdle round the earth in forty minutes. Who shall set ^{the} bounds ^{putting under} to the power of coal, iron, and steam?" ^{water}

It has been calculated that 50 tons of coal are capable of producing ^{moving force} mechanical power equal to the labours of 15 men for a ^{dry out} year. Upwards of 65,000,000 of tons are raised from the British

taking for granted
used, possibly
cells.
coal is composed
of vegetable substances
The vegetable origin of coal is no longer a matter of doubt. The

leaves of ferns, reeds, and other plants, are frequently found
between layers of shale or slaty clay, beautifully perfect, but
converted into coal. And in many kinds of coal, by means of
cutting, very thin sections, and by the employment of the microscope, the
cells of a vegetable structure become visible; thus affording us a
distinct proof that coal is really a vegetable substance, and pro-
duced by vegetable decay.

show
world during
deposited
months
the lapse of ages, by the united influences of heat and pressure. *rough clay*

It is interesting to remark the manner in which it has pleased
the Great Architect of the world to order matters, so that out of
the same material two products so totally different as vegetable
soil and coal should be formed.) Woody fibre is the material
in both cases—the result how different! Thus (the annual
decay of plants and leaves exposed to the air on the surface
restores to the soil all the materials it had been deprived of in
their production;) and this is effected by one sort of chemical
decay. But the decomposition by which coal was produced

—the object in view being different—was so ordered as to result *mobile*
in the formation of an admirable fuel for the use of man. The
plants and trees in this case were covered with water, and so
(kept from contact with the air.) The trunks of the trees grad-
ually decayed, until they were converted into a blackish-brown
substance resembling peat, but which still retained more or less
of the fibrous structure of wood. The decomposed mass became
gradually covered with a deposit of sediment, the great pressure
of which, when accumulated into beds of clay or sand of some
thickness, gave the hardness and density of a true mineral to this

substance. It thus became stored up for future employment in ^{accumulated} ~~the~~ service of man. ^{suberals:}

The trees which grew in the swamps and forests of the ^{massy soil} ~~coal~~ period derived their carbonaceous substance from carbonic acid gas and water, existing in the soil, and floating in invisible currents in the air. They imbibed the gas by their fronds, leaves, ^{absorbed} ~~and~~ roots; and separating the solid carbon from the ^{stake} ~~oxygen~~ gas with which it was combined, they appropriated the former for the purposes of their nourishment and growth, and restored the latter to the atmosphere. But the plant can only decompose carbonic ^{acid} ~~acid~~ and water with the aid of the light and heat of the sun; the process ceases in the dark.

In helping the plant to appropriate and deposit carbon in its ^{to be got} ~~tissues~~, the sun parted with so much of its light and heat, which ^{itself} ~~became~~ latent in the vegetable. This long dormant light and ^{secret} ~~heat~~ are set free by the process of combustion. When the ^{at rest} ~~Yule~~ log is laid on the blazing hearth of the baron's hall, and the ^{of wood} ~~logs~~ fagots are piled on the peasant's fire, they shed upon the radiant ^{fuel} ~~faces~~ of the festive circle light and heat which were borrowed ^{from the sun} ~~from the sun~~, and became latent in the plant, while the seed ^{ham} ~~ham~~ sprang into a sapling, and at length became a goodly tree, a ^{young tree} ~~century~~ century or two old. But the coal glowing in the cheerful fires of ^{large} ~~our~~ town dwellings, and diffusing light through the gas-pipes of ^{burning} ~~our~~ streets, is composed of vegetables in which are stored up light and heat derived from the sunshine of distant ages. (In the grate ^{to be got} ~~we~~ liberate this ancient heat for our comfort; in the gasometer we ^{operate} ~~take~~ advantage of the light for our convenience; in our boilers ^{avoid} ~~and~~ engines we convert the latent heat into mechanical force.)

"Wood fires," says a distinguished philosopher, "give us heat and light which have been got from the sun a few years ago. Our coal fires and gas lamps bring out for our present comfort ^{products} ~~heat~~ and light of the primeval sun, which have lain dormant beneath seas and mountains for countless ages."—"Sketches in Natural History," and "Ellis' Chemistry."

sun exists in beginning creation.

THE LIGHTING OF MODERN TOWNS.

Walking in the cheerful gas-lighted streets of a modern town, it is difficult for us to imagine what a gloomy, dismal place, a town of the olden times was, in the dark nights of winter. Two or three hundred years ago, the streets of even London and Paris were utterly unpaved. Heaps of rubbish and cinders encumbered them. All sorts of slops and sewage matter were emptied before the doors or thrown from the windows. Swine wallowed in the deep central gutters, while dogs, kites, and crows, fought for the garbage. The narrow, crooked lanes and alleys, were literally dung-hills.

A solitary cresset, perhaps, burned in the middle of the street. The cresset was a small fire-pan, or grate, set on a pole. If it burned, it made the darkness visible. If the wind blew at all strong, the cresset flared up and burned itself out. If there was rain, the cresset died away in a sputtering hiss, and gave up its feeble dispute with the reign of darkness.

A Mayor of London, Sir Henry Barton, so far back as the year 1416, ordered householders to hang out lanterns in front of their houses on the winter evenings betwixt All-hallows and Candlemas. This custom lasted for three centuries, and was common in London down to the reign of Queen Anne (and the days of Pope and Addison). The duty of hanging out a lantern was often evaded by the lazy and the greedy. The watchmen, who paced their rounds with a halbert, a lantern, a bell, and a dog, thundered an exhortation at the doors of the negligent. Ringing his bell, the guardian of the night bawled out—

"Lantern and a whole light!
Hang out your lights! Hear!"

No householder was obliged to have out a light later than eleven o'clock. After that hour, therefore, there was no light at all. (No house of less than ten pounds rent was required to furnish a lantern.) Whole streets were, consequently, without

light altogether, because the inhabitants were not rated at ten valued pounds.

The watchman had sometimes a musical turn, and delivered concordant his mandates in song:—choreg. *cast a round uttered.*

"A light here, maids! hang out your light,
And see your horns be clean and bright, *brightly.*
That so your candle clear may shine, *very.*
Continuing from six till nine,
That honest men that walk along, *upright pedestrians.*
May see to pass safe without wrong.

The making of lanterns was a great trade in those times. But manufacture a lantern then was very unlike the dazzling bull's eye from which glances the modern policeman flashes out his jet of piercing light. It cast a weak which feebly glimmered a murky gleam of a dirty yellow shapless dark beam colour.

Public lanterns were first thought of about two hundred years ago. La Reine, the first lieutenant-general of the Paris police, introduced them in 1667. This was hailed as a great event, and welcomed. a medal was struck in honour of it, bearing the motto, "The security and splendour of the city." One lantern in the centre of each street, and one at each end, constituted the security and splendour which so delighted the Parisians of those days! These lanterns were slung over the middle of the street by a rope which hung passed across from side to side. By means of a pulley, the what lantern was lowered to the ground to be lighted, and then hoisted raised up up again. In the terrible times of the French Revolution, the mining cry of the mob, "To the lantern!" sealed the fate of many an rabble unhappy victim. It was only necessary to lower the lantern, untie it, noose the rope on the neck of the man, and hoist away. time in none Next minute, the mob surrounded a dangling corpse. hanging loosely

Defoe—whom every boy loves because he wrote "Robinson Crusoe," and whom every man that is manly loves for his true-hearted brave sinister love of liberty—was in many things a century before his time. In 1729 he published a pamphlet, suggesting a plan "by which treatise our streets will be so strongly guarded and so gloriously illu minated, that any part of London will be as safe and pleasant as lighted

meeting a horse
by night to rob.
impossible.

ghost-
robbers.
evening.
large number

midnight as at noonday, and burglary totally impracticable." But twenty years after that, London was so badly watched and lighted, that the Lord Mayor and Aldermen went with a petition to the King, stating that the city was so infested at night by gangs of lawless men, armed with "bludgeons, pistols, cutlasses," and other weapons, that it was dangerous to go out after dusk, as so many were robbed, wounded, and often murdered. While this was the case in the capital, one may imagine how unprotected the provinces remained. This, it must be remembered, was the age of foot-pads and highway-men.

robber in post

instrument

short

gathered-
hurry.

funnel-

at a distance
earth-foul

relations,
his pockets
left an eye
the danger was
over.

made tools

Before the doors of some of the old houses in London there is still to be seen, on each side of the posts of the arched iron lamp-rail, an extinguisher, shaped like the old post-boy's horn. This was to thrust the torches or flambeaus in, to extinguish them, after the inmates of the house had been lighted home. Link-boys, or torch-bearers, were as common then as street-sweepers are in the present day, and picked up what they could by lighting passengers along the streets. They hovered about the theatres and taverns, or took their stand with their smoky light wherever an open cess-pool or a little lake of mud indicated a locality where gentlemen might endanger their necks or soil their silk stockings. The link-boys bore a rather bad name. They were on friendly terms with the rogues, the cut-purses and the cloak-snatchers. They watched the watchmen, and gave a sign to the house-breakers and foot-pads (when the coast was clear.) The poet Gay gives an advice to the belated passenger in London streets:—

entirely
divided the share
Though thou art tempted by the linkman's call, torch-bearers
Yet trust him not along the lonely wall; solitary.
In the midway he'll quench the flaming brand, extinguish
And share the booty with the pilfering band." plenary torch
gaily to the scene

need for
holding oil
coarsely
making
right-hot
celling

The age of oil-lamps came about 1762. Then we had the lamp-lighter, with his ladder, oil-can, and cotton-wicks, and with tow around his wrist, trimming and cleaning in the day-time, and in the dusk of evening climbing the posts and "lighting up." Then the bold robbers, who carried pistols, bludgeons and blun-

short-handgun.
 derbusses, began to quit the cities, and to plunder passengers on the highways—for they “loved darkness rather than light.” The discovery of gas, and the application of it for the purpose of lighting our towns and cities by night, no doubt did as much good towards checking street robberies as the organization of the powerful police force.

Tenantry, as we do, a world which is placed as much under the dominion of darkness as of light, without the assistance of artificial light man's labour would always be checked, and his efforts at improvement after sunset rendered, in many instances, useless. Human observation was, therefore, naturally directed, in the earliest ages, to the most enduring means of procuring this great requisite of agreeable and useful existence, *fire.* Fatty substances, with a wick inserted in their mass, were used instead of the lighted pine or fagot. But with this invention the improvement of artificial light was stationary for ages. It was not even until towards the end of last century that the first clear discovery was made of the present brilliant means of procuring artificial light. *leave. dwelling planet. obstructed. made a fortune. lastly, acquire. put in. remained the same. gas.*

Mr. Murdoch, of Redruth in Cornwall, after many experiments constructed an apparatus by means of which he lighted the Soho Foundry, Birmingham, with gas in the year 1798. At the short peace with France in 1802, when there was a general illumination, the people of Birmingham saw a wonder—the Soho Works illuminated with gas. From that time forward the new light made rapid progress. Town after town was lighted up with it, till now there is scarcely a considerable village which does not enjoy the boon. *practical. construction. buildings. decorative houses. large. blessing of gas.*

So great are the advantages derived from this brilliant light, that about 200,000 tons of coal are used annually in the preparation of it for London alone; and in the longest night of winter no less than 7,000,000 of cubic feet of gas are consumed in the metropolis.

IRON.

THE splendid colour of gold, its great density, its imperishable relative temperature, and its comparative scarcity, have obtained for it the epithet of precious; although, in point of utility to man, iron has degrees far higher and more numerous claims to such a title. Indescribable

The innumerable applications of iron in our own day result from the various useful properties of this metal. It can be brought to a fluid state, and made to assume whatever form has been

given to the mould designed to receive it; it can be drawn out into bars of any degree of strength, or into wires of any degree of fineness; it can be spread out into plates or sheets; it can be twisted and bent in all directions; it can be made hard or soft, sharp or blunt. Iron may be regarded as the parent of agriculture, and of the useful arts; for without it the ploughshare could not have rendered the earth fertile. Iron furnishes the

scythe and the pruning-hook, as well as the sword and the cannon: it forms the chisel, the needle, and the graver: springs of various kinds, from the spring of a watch to that of a carriage; the chain, the anchor, and the compass,—all owe their origin to this most useful of all the metals. (We can scarcely move without meeting with new and surprising proofs of the fact that we are, indeed, living in the age of iron.) We travel on land by iron

steam engines, drawn by horses of iron; we pass over bridges constructed of iron, and often suspended by iron rods; our steamboats are of iron; our bedsteads, chairs, stools, and ornaments are frequently of iron; clumsy wooden gates are being superseded by light and elegant structures of iron; buildings of all kinds are supported on pillars of iron; and, to crown all, we build dwelling-houses and light-houses of iron, and transport them to the most distant parts of the globe.

Iron is more extensively diffused throughout the crust of the earth than any other metal: and its importance is equal to its abundance; for there is no other substance which possesses so many valuable properties, or is so well adapted to form the in-

struments which have assisted to acquire, and still continue to maintain, the dominion of mind over matter. *matters brought under its control by the will of man, the instrument which work in the form of matter.*

Iron in a purely metallic form is of rare occurrence, though in different parts of the world several large masses of metallic iron are known to exist, and other similar masses have at various times been observed to fall from the atmosphere. In South America there is a mass of meteoric iron estimated at thirty-six thousand pounds weight, and one in Siberia of sixteen thousand pounds. *iron in the metallic state*

The iron of commerce is not found in a metallic state, but is produced from iron ore, familiarly known as ironstone. Beds of ironstone occur in various parts of the United Kingdom, especially in the south-west of Scotland, South Wales, and South Staffordshire and its neighbourhood. *iron is used in commerce*

The first process in the manufacture of iron is roasting the ore; *roasting* which is done in kilns or furnaces, or in large heaps in the open air. The effect of roasting the ore is to drive off the water, sulphur, and arsenic, which it generally contains. It is then *then it* mixed with limestone and coke and brought to the blast furnace; *the mine* which is the most important feature in an iron-work, rising to the height of from fifty to seventy feet, and lighting up the country around like a small volcano. *the blast furnace*

The coke, ironstone, and limestone, ultimately form two liquid products at the bottom of the furnace. One of these is glass, composed of the limestone in combination with the earthy impurities of the ore. This, when drawn off and left to cool, forms slag or cinder. The other product is liquid iron, combined with the carbon of the fuel. *iron, glass, ashes*

As the materials gradually descend from the top to the bottom of the furnace, the ore, being thus for several hours in contact with the burning fuel, is almost saturated with carbon when it reaches the lower or hottest part of the furnace. Here the melted iron is drawn off at intervals of from eight to twelve hours. This work is continued with double sets of attendants day and night, without intermission, for two or three years; for if the furnace were allowed to cool, the contents would become solid and the furnace be ruined. *constantly working*

act of casting
small birds of iron
moulded sand
cast
 Previous to each cast, a channel, called the sow, is formed in a bed of sand in front of the furnace. Branching off from the sow, at right angles to it, are a number of smaller channels called pigs. Into these the melted metal is run. The bars when cooled are in the state known commercially as pig iron. The general name of the metal in this state is cast iron. *a compound of carbon & iron*

purest iron
capable of being drawn out
 Iron is employed in the arts in three different states : as crude or cast iron, as steel, and as wrought iron; the differences depending upon the relative amount of carbon with which the metal is combined. Cast iron contains a larger proportion of carbon than steel, and steel more than wrought or malleable iron, the best malleable iron having only a very minute portion of carbon. The presence of carbon in cast iron renders the metal more fluid when melted, and, consequently, better suited for casting in moulds.

cast iron
difference
separated by a sieve
 Cast iron is extremely brittle, and for the most part of a dark gray or blackish colour. An immense variety of useful and important articles are formed of cast iron. These are made by pouring the liquid metal into moulds formed in sifted sand.

process of melting bloom
act
moving
solidity
freezes
impure mass
process
subsequent
heavy
cast iron
melting
 Wrought or malleable iron is produced from cast iron by a process called blooming. The cast iron is thrown into a furnace, and melted by a fierce flame which is made to play upon its surface. Here it is kept for some hours, a workman constantly stirring it, until, notwithstanding the heat, it gradually acquires consistency and congeals. A large piece called a bloom or ball is then taken out while hot, and beaten by a huge hammer worked by machinery. This treatment presses a quantity of dross out of the iron. While still at a bright red heat it is passed through massive rolling machines, till it is reduced to the thickness required. It is now very different from the pig iron used to produce it. While in the form of pig iron it was very hard, very brittle, and readily fusible; it is now a long slender bar of soft, tough, malleable iron, fusing with difficulty; and this remarkable change is supposed to be produced merely by the separation of a little oxygen and carbon from the cast iron.

Steel is produced from iron by adding a little carbon to that which wrought iron already contains. Within what is

called a cementing furnace, bars of iron are buried in earth-troughs filled with pounded charcoal. These troughs are carefully closed with clay, then a fire is lighted below, and an equable heat maintained for several days, until the iron has absorbed the quantity of carbon requisite to form the kind of steel required by the manufacturer. The carbon in common iron appears to be only mechanically mixed with the metal, but in the cementing process a chemical union between the two is effected, and thus are developed those remarkable properties which distinguish steel from iron, and adapt it to purposes for which iron is inadequate. Thus steel is so much harder than iron, that it can cut and file it. Steel can even scratch the hardest glass. It is denser than iron, has a finer grain, assumes a brighter and whiter lustre when polished, and possesses much greater elasticity. When heated it assumes various beautiful tints of colour; and if suddenly cooled, it becomes harder, more brittle, and less flexible than iron. Indeed, the chief value of steel depends upon the ease with which it can be tempered to any degree between extreme hardness and softness. And even after having been hardened it may have its softness and ductility restored by being again heated and suffered to cool slowly.

The best iron for making into steel comes from the mine of Dannemora, in Sweden. This mine yields every year about 4,000 tons of iron, which are shipped for the port of Hull; and thence a small portion is sent to London, Newcastle, and Birmingham; but by far the largest quantity goes to Sheffield, where more steel is made than in any other place in the world.

When converted into ordinary machinery, cast iron originally worth *changed at first* £1 becomes worth about £4; into large ornamental work, £45; *selling to* into buckles and Berlin work, £600; and into buttons, £5,000. *manuf.*

A bar of wrought iron, originally worth £1, becomes worth about £2, 10s. when worked into horse shoes; £30 when made into table-knives; £70 when turned into needles; £650 when in the form of penknife blades; and, to crown all, it becomes worth £50,000 when manufactured into watch-springs.

THE CHEMISTRY OF A CANDLE.

unduly loved. "AND now, uncle," asked Harry, who was a favourite with the old gentleman, "can you tell me what you do when you put a candle out?"

extinguish with dear. "Put an extinguisher on it, you young rogue, to be sure."

interrupt. "Oh, but I mean, you cut off its supply of oxygen," said Master Harry.

"Cut off its what?" No

organised society of public characters. "He means something he heard at the Royal Institution," observed Mrs. Wilkinson. "He reads a great deal about chemistry, and he attended Professor Faraday's lectures there on the chemical history of a candle, and has been full of it ever since."

droll. "Now, you sir," said Uncle Bagges, "come you here to me, and tell me what you have to say about this chemical, eh?—or comical; which?—this—comical chemical history of a candle."

"Harry, don't be troublesome to your uncle," said Mr. Wilkinson.

"Troublesome? Oh, not at all. I like to hear him."

"Let us get a wax candle then, uncle. There's one on the mantel-shelf. Let me light it. ~~will never be placed in front of the chimney.~~

"Take care you don't burn your fingers, or set anything on fire," said Mrs. Wilkinson.

towards. "Now, uncle," commenced Harry, having drawn his chair to the side of Mr. Bagges, "we have got our candle burning. Look down on the top of it, around the wick. See, it is a little cup full of melted wax. The heat of the flame has melted the wax just round the wick. The cold air keeps the outside of it hard, so as to make the rim of it. The melted wax in the little cup goes up through the wick to be burned, just as oil does in the wick of a lamp. What do you think makes it go up, uncle?"

very small holes. "Why—why, the flame draws it up, doesn't it?"

"Not exactly, uncle. It goes up through little tiny passages in the cotton wick, because very, very small channels, or pipes, or

his uncle has beautifully recaptured by what he has done the Royal Institution.

bright
continues
no portion
the flame of the candle is a little shining case, with gas in the inside of it and air on the outside, so that the case of flame is between the air and the gas. The gas keeps going into the flame to burn; and when the candle burns properly none of the gas ever passes out through the flame, and none of the air ever gets in through the flame to the gas. The greatest heat of the candle is in this skin, or peel, or case of flame."

head
"Case of flame!" repeated Mr. Bagges. "Live and learn. I should have thought a candle-flame was as thick as my poor old noddle." *the more we live the more we learn.*

burned up
precisely
burned slightly
"I can show you the contrary," said Harry. "I take this piece of white paper, look, and hold it a second or two down on the candle-flame, keeping the flame very steady. Now, I'll rub off the black of the smoke, and—there—you find that the paper is scorched in the shape of a ring, but inside the ring it is only dirtied, and not singed at all."

"Seeing is believing," remarked the uncle.

mining
notwardly
candle
reach
"But," proceeded Harry, "there is more in the candle-flame than the gas that comes out of the candle. You know a candle won't burn without air. There must be always air around the gas, and touching it, as it were, to make it burn. If a candle hasn't got enough of air it goes out, or burns badly, so that some of the vapour inside of the flame comes out through it in the form of smoke; and this is the reason of a candle smoking. So now you know why a great clumsy dip smokes more than a neat wax candle: it is because the thick wick of the dip makes too much fuel in proportion to the air that can get to it."

small particles
"What should you say now," continued Harry, "if I were to tell you that the smoke that comes out of a candle is the very thing that makes a candle burn with a bright light? Yes; a candle shines by consuming its own smoke. The smoke of a candle is a cloud of small dust; and the little grains of dust are bits of charcoal, or carbon, as chemists call it. They are burned the moment they are made; and the place they are made in is the case of flame itself, where the strongest heat is. The great heat separates them from the gas which comes from the melted wax, and, as

soon as they touch the air on the outside of the thin case of flame, they burn."

"Can you tell how it is that the little bits of carbon cause the brightness of the flame?" asked Mr. Wilkinson.

"Because they are pieces of solid matter," answered Harry. "To make a flame shine, there must always be some solid, or at least liquid, matter in it."

"Very good," said Mr. Bagges; "solid stuff necessary to brightness!"

"Some gases and other things," resumed Harry, "that ~~burn~~ ^{burn away again} burn with a flame you can hardly see, burn splendidly when ^{brightly} something solid is put into them. Oxygen and hydrogen—tell me if I use too hard words, uncle—oxygen and hydrogen gases, if mixed together and blown through a pipe, burn with plenty of ^{heat} ~~heat~~, but with very little light. But if their flame is blown upon a piece of quick-lime, it gets so bright as to be quite dazzling limestone. Make the smoke of oil of turpentine pass through the same flame, and it gives the flame a beautiful brightness directly. Well, ^{immediately} carbon, or charcoal, is what causes the brightness of all lamps, and candles, and other common lights; so, of course, there is carbon in what they are all made of." ^{in their composition}

"So carbon is smoke, eh? and light is owing to your carbon. Giving light out of smoke, eh? as they say in the classics," observed Mr. Bagges.

"But what becomes of the candle," pursued Harry, "as it burns away? where does it go?"

"Nowhere, I should think. It burns to nothing."

"Oh dear, no!" said Harry; "everything goes somewhere. You can see it goes into smoke, which makes soot, for one thing ^{black thing}. There are other things it goes into, not to be seen by merely looking, but you can get to see them by taking the right means: just put your hand over the candle, uncle."

"Thank you, my young gentleman, I would rather be excused."

"Not close enough down to burn you, uncle; higher up. There; you feel a stream of hot air, so something seems to rise

from the candle. Suppose you were to put a very long, slender gas-burner over the flame, and let the flame burn just within the end of it, as if it were a chimney, some of the hot steam would go up and come out at the top, but a sort of dew would be left behind in the glass chimney, if the chimney was cold enough when you put it on. There are ways of collecting this dew; and when it is collected it turns out to be really water. I am not joking, uncle. Water is one of the things which the candle turns into while burning—water coming out of fire. In some light-houses, Professor Faraday says, two gallons of oil are burned in a single night; and if the windows are cold, the steam from the oil clouds them, and, in frosty weather, freezes into ice."

"Water out of a candle, eh?" exclaimed Mr. Bagges. "As hard to get, I should have thought, as blood out of a post. Where does it come from?"

"Part from the wax, and part from the air; and yet not a drop of it comes either from the air or the wax. (What do you make of that, uncle?" *what do you understand by this?*

"Eh? Oh, I'm no hand at riddles!) Give it up." *same I understand*

"No riddle at all, uncle. That which comes from the wax is a gas called hydrogen. We can obtain it from water by passing the steam of boiling water through a red-hot gun-barrel which contains a quantity of iron wire or turnings. Part of the steam will mix with the iron turnings, and change them into rust; and the other part, which comes out of the end of the barrel, will be hydrogen gas, and this part of the water we can set on fire."

"Eh?" cried Mr. Bagges. "Upon my word! (One of these days we shall have you setting the river on fire!)"

"(Nothing more easy," said Harry. "When pure hydrogen burns, we get nothing but water.) I should like to show you how light this hydrogen is; and I wish I had a small balloon to fill with it and make go up to the ceiling; or a bagpipe full of it to blow soap-bubbles with, and show how much faster they rise than common ones blown with the breath."

"So do I," interposed Master Tom. *I too wish to put in by the way of interpretation*

"And so," resumed Harry, "hydrogen, you know, uncle, is part of water, and just one-ninth part. The other eight parts are a gas also, called oxygen. This is a very curious gas. It won't burn in air at all itself, like gas from a lamp, but it has a wonderful power of making things burn that are lighted and put into it. A lighted candle put into a jar of oxygen blazes up directly, and is consumed *(before you can say Jack Robinson)*. Charcoal burns *immediately* away in it as fast, with beautiful bright sparks; phosphorus burns *elementary* with a light that would dazzle you to look at; and a piece of iron *substance* or steel, just made red-hot at the end first, may be burned in oxygen more quickly than a stick could be in common air. The experiment of burning things in oxygen beats any fire-works." *surprised*

"How funny that must be!" exclaimed Tom. *roll + wow*

"Now we see, uncle," Harry continued, "that water is hydrogen and oxygen united together; that water is got wherever hydrogen is burned in common air; that a candle won't burn without air; and that, when a candle burns, there is hydrogen in it burning and forming water. Now, then, where does the hydrogen of the candle get the oxygen, to turn into water with it?"

"From the air, eh?"

"Just so. It is the oxygen in the air that makes things burn; but if the air were nothing but oxygen, a candle would not last above a minute."

"If a house were on fire in oxygen," as Professor Faraday said, "every iron bar, or, rather, every pillar, every nail and iron tool, and the fireplace itself; all the zinc and copper roofs, and leaden coverings, and gutters, and pipes, would consume and burn, increasing the combustion."

"That would be, indeed, burning 'like a house on fire,'" *obviously successfully* observed Mr. Bagges.

"But there is another gas, called nitrogen," said Harry, "which is mixed with the air; and it is this which prevents a candle from burning out too fast."

"Eh?" said Mr. Bagges. "Well, I will say I do think we are under considerable obligations to nitrogen."

"I have explained to you, uncle," continued Harry, "how a candle, in burning, turns into water. But it turns into something else besides that. The little bits of carbon that I told you about, which are burned in the flame of a candle, and which make the flame bright, mingle with the oxygen in burning, and form still another gas, called carbonic acid gas, which is very destructive to life when we breathe it. So you see that a candle-flame is vapour burning; and that the vapour, in burning, turns into water and carbonic acid gas."

"Haven't you pretty nearly come to your candle's end?" said Mr. Wilkinson.

"Nearly. I only want to tell uncle that the burning of a candle is almost exactly like our breathing. Breathing is consuming oxygen, only not so fast as burning. In breathing, we throw out from our lungs water in the form of vapour, and carbonic acid gas, and take oxygen in. Oxygen is as necessary to support the life of the body as it is to keep up the flame of a candle."

"Well," said Mr. Bagges, "any more to tell us about the candle?"

"I could tell you a great deal more about oxygen, and hydrogen, and carbon, and water, and breathing, that Professor Faraday said, if I had time; but you should go and hear him yourself, uncle."

"Eh? well, I think I will. Some of us seniors may learn something from a juvenile lecture, at any rate, if given by a Faraday. And now, my boy, I will tell you what," added Mr. Bagges; "I am very glad to find you so fond of study and science; and you deserve to be encouraged; and so I'll give you a—what-d'ye-call-it?—a galvanic battery on your next birthday; and so much for your teaching your old uncle the chemistry of a candle."

HEARTHES AND HOMES IN THE OLDEN TIME.

fireplace

Of all the changes which the progress of science and civilization has produced, that in domestic architecture has perhaps been the ^{most striking}. In former times the houses in the towns and ^{cities} of Old England were, with very few exceptions, built of wood, and their roofs were thatched with straw. The larger class were built with each story projecting over the story beneath; and in the more populous parts of the cities, where the streets were narrow, the people out of their attic windows could talk, and even shake ^{small windows} hands with their opposite neighbours! The houses were generally provided with porches before the principal entrance, sufficiently ^{spacious} to seat the whole family; the parlours were large, and ^{the halls} ample; but in every other respect they were sadly deficient of those auxiliaries to comfort and convenience which we ^{look for} in our modern habitations. Glass was a luxury too expensive for the generality of houses: lattice-work, or an oaken frame finely ^{checkered}, and panelled with horn, were the usual substitutes. Glass was not introduced into domestic architecture until the latter part of the fourteenth century, and then it was considered so valuable, that, when a baron left his mansion for any length of time, the windows were taken out, wrapped up, and carefully laid ^{past}.

No part of the household arrangements of the olden time has been so much admired as the capacious chimney corners of the Elizabethan age. Such comforts were unknown, however, a few generations before. A hole at the top of the roof, or an unglazed window, imperfectly supplied the place of a chimney. If they closed the window against the inclemency of the weather, they extinguished the fire, or they were in danger of being smothered in the smoke which vainly sought an escape through the apertures of the building. Chimneys were rare, previous to the fourteenth century; they then probably came into more general use. Piers Plowman speaks of a "chambre with a chimney in which rich men dined." Holinshed says, "the old men in his day noted how marvellously things were altered in England within ^{noted}."

their remembrance, and especially in the multitude of chimneys which had been lately erected; whereas in their young days there were only two or three, if so many, to be found in the cities and towns of England." The usual custom was, to have a large hearth in the middle of the room, on which the fire was kindled, and the smoke was allowed to ascend through a hole in the top of the building.

Such were the homes of the people of England in the olden time;—how different from our homes and hearths of the present day! We can scarcely imagine, as we draw the chair to our fire-side, with the embers glowing cheerily within its polished grate; a warm rug for our feet; books strewed around us, ready at our hand, and willing to entertain us; the windows tightly glazed, guarding us from the howling wind; and a lamp shedding its light on the social tea-tray;—as we partake of these comforts, and a thousand others, we can hardly imagine how our ancestors of old could have extolled the comforts of their hearths, did we not know how sweet is home, however homely; did we not know how immeasurably more attractive is the meanest chamber with that dear name, than the "marbled halls" of strangers; and did we not know that the most miserable cot of the poorest peasant becomes a paradise of bliss, when sanctified by the name of home. *heaven, happiness made sacred.*

covering

WONDERS OF THE COTTON MANUFACTURE.

See full A BAG of cotton, even in its unmanufactured state, is a wonderful example of commercial enterprise and tact; for the quantity of the fibrous material yielded by each plant is exceedingly small, and the "magic of numbers" is required to make up a bag or bale. *aggregated multitude of units.*

Considerably more than a million of such bales of raw cotton are now brought to Liverpool yearly; while in 1755 only five bales of American cotton were imported.

Nothing can excite the attention of a stranger more than the enormous trains of trucks laden with cotton which run smoothly *Low carriages.*

over the thirty miles between Liverpool and Manchester, and deposit their stores at the terminus. *and point here means Manchester.*

The perfection of the cotton machinery, and the wonderful ^{mechanics} ~~rapidity~~ ^{consequently} with which the raw fibre can be manufactured into cloth, ^{is so rapid} may be illustrated by the following example:—A Preston manufacturer purchased some raw cotton, which was despatched from Liverpool at three o'clock on a Friday morning. It was delivered at the Preston factory at eight minutes past nine o'clock; and ^{cotton manuf-} before eleven o'clock part of it had passed through the several ^{actory.} operations of mixing, scutching, carding, drawing, slubbing, roving, ^{from} ~~ing~~, ^{must be} ~~and spinning~~. At half-past eleven o'clock a portion of it was ^{ready} made into cloth by the power-loom; and at half-past four a ^{portion of} good shirting cloth was despatched by railway to Liverpool, which it reached by seven in the evening. Thus the same specimen of cotton went through all the stages of manufacture, from the raw fibre to the woven cloth, and travelled about eighty miles, all between three in the morning and seven in the evening! The Preston weaver wore a garment made of this cloth on the same evening!

Many of the manufacturers pride themselves on the fineness ^{of} of the yarn they produce; and well may they do so. One manu- ^{facturer} ~~facturer~~ has succeeded in producing so exquisite a degree of fine- ^{ness} ~~ness~~ as to obtain 386,400 yards, or 220 miles of yarn from one single pound of cotton! Five or six hundred millions of pounds are yearly wrought up into yarn; and if the whole were wrought ^{to this fineness} to this fineness, such is the astounding magnitude of this manufacture in England, that in six hours we might spin a thread [that would reach from the earth to the sun;] and in less than a fortnight we might make a fairy rope-ladder to the planet ^{imaginary} Neptune! *they justly boast of the product of their labour*

Mr. Kohl, a German traveller, appears to have been struck, as ^{wondered at} every stranger must be, with the completeness of the arrangements ^{perfection} for despatching bales of finished goods from Manchester to foreign countries. After describing the vast warehouses, and the bales of ^{store houses for} goods piled up in them, he says, "Every country has its particular ^{goods} partialities in the goods it purchases." The speculating merchant ^{special bond} ~~special bond~~ ^{purchasing}.

as well as must always be well acquainted with these, no less than with the real wants and customs of each nation. From the Manchester warehouses great quantities of black cloth are annually sent to Italy, in order to clothe the innumerable priests of that country; but this black cloth must always be of a particular coal-black, without the slightest tinge of brown or blue. Goods must also be packed differently for different nations; thus, I saw bales of cotton intended for China packed in the Chinese manner, and decorated with bright, tasteful little pictures, representing Chinese customs, ceremonies, costumes, &c. Nor must the manner of transport used in the interior of the countries for which they are intended be forgotten in the packing of the goods. Wares to be carried on the backs of elephants, camels, or llamas, must be differently packed from those to be conveyed by waggons, canals, or railways."—The patterns for the home market are generally indefinite, consisting of spots, stripes, and curves, bearing no resemblance to any particular objects. The Chinese market requires exact copies of some natural objects, such as buds or flowers, without any attempt at perspective. The South American market calls for the most gorgeous assemblage of colours—blue, yellow, and red—that the dyer and printer can give.

The printing of calicoes has gone on increasing year after year to an amazing extent. At the beginning of the present century, the quantity was about thirty millions of yards, whereas it is now somewhere about five hundred millions.

A calico-printing establishment, like a cotton-mill, is a wonderful triumph of modern science; and when the mechanical and chemical improvements of both are viewed together, they form a splendid and matchless exhibition of science applied to the arts, and easily account for a rapidity of growth and a vastness of extension in the manufacture which has no parallel in the records of industry.

very black.

texture of cloth.

made in print to suit

means to use

national styles

dress carriage

samples on sale not finished

black cloth

wonderful

success

unparalleled display of science

history of industrial products

extending after competition

THE SILK MANUFACTURE.

IN the reign of the Emperor Justinian, two monks on a mission ^{delegated by authority} to China brought away with them a quantity of silk-worm eggs, concealed in a piece of hollow cane, which they carried to Constantinople. There they hatched the eggs, reared the worms, and spun the silk—for the first time introducing that manufacture into Europe, and destroying the monopoly which China had hitherto ^{roughly to maturity} enjoyed. From Constantinople the knowledge and the practice of the art gradually extended to Greece, thence to Italy, and next to Spain. Each country, as in turn it gained possession of the ^{exclusive command} secret, strove to preserve it with jealous care; but to little purpose. A secret that so many thousands already shared in common could not long remain so, although its passage to other countries might be for a time retarded. France and England were behind most of the other states of Europe in obtaining a knowledge of the "craft ^{in due order of succession} and mystery." The manufacture of silk did not take root in France till the reign of Francis I.; and was hardly known in England till the persecutions of the Duke of Parma in 1585 drove a great number of the manufacturers of Antwerp to seek refuge in our land. James I. was very anxious to promote the breed of silk-worms, and the production of silken fabrics. During his reign a great many mulberry-trees were planted in various parts of the country—among others, that celebrated one in Shakspeare's garden at Stratford-on-Avon—and an attempt was made to rear the worm in our country; which, however, the ungenial climate frustrated. Silk-throwsters, dyers, and weavers, were brought over from the Continent; and the manufacture made such progress that, by 1629, the silk-throwsters of London were incorporated, and thirty years afterwards employed no fewer than 40,000 hands. The emigration from France consequent on the revocation of the Edict of Nantes (1685) added not only to the number engaged in the trade, but to the taste, skill, and enterprise, with which it was conducted. (It is not easy to estimate how deeply France wounded herself by the iniquitous persecution of the Protestants, what a great injury it did to herself)

*made return
steady attention
to business
distinctly familiar
with
limited* or how largely the emigrants repaid by their industry the shelter which Britain afforded them.)

*use twisted
of more filaments
of silk* Although the manufacture had now become fairly naturalized in England, it was restricted by our ignorance of the first process to which the silk was subjected. Up till 1718, the whole of the silk

trust used in England, for whatever purpose, was imported "thrown," —that is, formed into threads of various kinds and twists. A

*being equal
throughout* young Englishman named John Lombe, impressed with the idea that our dependence on other countries for a supply of thrown

*expected
admission* silk prevented us from reaping the full benefit of the manufacture, and from competing with foreign traders, conceived the project of visiting Italy, and discovering the secret of the operation. He

*forbidding
pretending
young* accordingly went over to Piedmont in 1715, but found the difficulties greater than he had anticipated. He applied for admittance at several factories, but was told that an examination of the

*duration
described the
greatest secret
found out* machinery was strictly prohibited. Disguising himself, however, in the dress of a common labourer, he at last obtained access in secret to the works. His visits were few and short; but he made

*recorded
figure & plan
helped* the best use of his time. He carefully examined the various parts of the machinery, ascertained the principle of its operation, and made himself completely master of the whole process of

with throwing. Each night he noted down everything he had seen, and drew sketches of parts of the machinery. This plot, however, was discovered by the Italians. He and two accomplices had to flee for their lives, and not without great difficulty escaped to a ship which conveyed them to England.

Lombe had not forgotten to carry off with him his note-book, sketches, and a chest full of machinery; and on his return home he lost no time in practising the art of "throwing" silk. On a swampy island in the river Derwent, at Derby, he built a magnificent mill, yet standing, called the Old Silk Mill. Its erection occupied four years, and cost £30,000. It was five stories in height, and an eighth of a mile in length. *1750*

*to complete
the work
proved more
successful* While the mill was building, Lombe, in order to save time and earn money to carry on the works, opened a manufactory in the Town Hall of Derby. His machinery more than fulfilled his

the best of throwing silk to throw was unknown in England

expectations, and enabled him to sell thrown silk at much lower prices than were charged by the Italians. A thriving trade was thus established, and England relieved from all dependence on other countries for "thrown" silk. *profuseous business freed from*

JOSEPH MARIE JACQUARD.

Joseph Marie Jacquard, the inventor of the loom which bears his name, and to whom the extent and prosperity of the silk manufacture of our time is mainly due, was born at Lyons in 1752, of humble parents, both of whom were weavers. His father taught him to ply the shuttle; but for education of any other sort, he was left to his own resources. He managed to pick up some knowledge of reading and writing; but his favourite occupation was the construction of little models of houses, towers, articles of furniture, and so on, which he executed with much taste and accuracy. On being apprenticed to a type-founder, he exhibited his aptitude for mechanical contrivances by inventing a number of improved tools for the use of the workmen. On his father's death he set up as a manufacturer of figured fabrics; but although a skilful workman, he was a bad manager, and the end of the undertaking was, that he had to sell his looms to pay his debts. He married, but did not receive the dowry with his wife which he expected; and, to support his family, he had to sell the house his father had left him—the last remnant of his little heritage. The invention of numerous ingenious machines for weaving, type founding, &c., proved the activity of his genius, but produced not a farthing for the maintenance of his household. He entered into the service of a lime-maker at Brest, while his wife made and sold straw hats in a little shop at Lyons. He solaced himself for the drudgery of his labours by spending his leisure in the study of machines for figure-weaving. The idea of the beautiful apparatus which he afterwards perfected began to dawn on him, but for a season it was driven out of his mind by the stirring transactions of the time. The whirlwind of the Revolution was sweeping through the land. Jacquard ardently embraced the cause of the people.

He took part in the gallant defence of Lyons in 1793; fled for his life

*shared in
brave*

*established
eagerly ex-
posed*

*he was permitted to follow his vocation
Jacquard loom
lay on
invention—
succeeded
after
business
type
finished
inexactness.
of tendency
inventing
established
manufactured
cloth
rigidly
inheritance
support—
comforted
hard work
ceasing pro-
ceeding
revolving
established
possible
rind*

conquest on the reduction of the city; and with his son—a lad of sixteen
needy—joined the army of the Rhine. His boy fell by his side on the
 field of battle, and Jacquard, destitute and broken-hearted,
 returned to Lyons. His house had been burned down; his wife
 was nowhere to be heard of. At length he discovered her in a
pleasant miserable garret, earning a bare subsistence by plaiting straw.
hard-fighting For want of other employment he shared her labours, till Lyons
 began to rise from its ruins, to recover its scattered population,
fresh and revive its industry. Jacquard applied himself with renewed
 energy to the completion of the machine of which, before the
 Revolution, he had conceived the idea; exhibited it at the National
exhibition Exposition of the Products of Industry in 1801; and obtained a
con- bronze medal and a ten years' patent.
took up for himself During the peace of Amiens, Jacquard happened to take up a
 newspaper in a house which he frequented, and his eye fell on a
 translated extract from an English journal, stating that a prize
 was offered by a society in London for the construction of a
 machine for weaving nets. (As a mere amusement he turned his
 thoughts to the subject, contrived a number of models, and at last
 solved the problem.) He made a machine, and wove a little net
 with it. One day he met a friend who had read the paragraph
 from the English paper. Jacquard drew the net from his pocket,
 saying, "Oh, I've got over the difficulty! see, there is a net I've
said nothing made." After that he took no more thought about the matter,
surprised and had quite forgotten it, when he was startled by a summons
 to appear at the Prefectal Palace. The prefect received him very
 kindly, and expressed his astonishment that his mechanical genius
 should so long have remained in obscurity. Jacquard could not
 imagine how the prefect had discovered his mechanical experi-
merit ments, and began vaguely to dread that he had got into some
extremely shocking scrape. (He stammered out a sort of apology.) The
disgraceful prefect was surprised he should deny his own talent, and said he
highly had been informed that he had invented a machine for weaving
admitted nets. Jacquard owned that he had. *he spoke something by way of excuse*
whom "Well, then, you're the right man after all," said the prefect.
what has gone "I have orders from the Emperor to send the machine to Paris."
before

having the spirit of a man who is not to be defeated by any of the difficulties of life.

"Yes, but you must give me time to make it," replied Jacquard.

In a week or two Jacquard again presented himself at the palace with his machine and a half-manufactured net. The prefect was eager to see how it worked. And when he had seen it ^{operated} in operation, "Capital!" cried he. "I have his majesty's orders, ^{excellence} M. Jacquard, to send you and your machine to Paris."

"To Paris! how can that be? how can I leave my business here?"

"There is no help for it; and not only must you go to Paris, but you must start at once, without an hour's delay."

"If it must be, it must." I will go home and pack up a little bundle, and tell my wife about my journey. I shall be ready to start to-morrow. ^{if it be my wife must go.}

"To-morrow won't do; you must go to-day. A carriage is waiting to take you to Paris; and you must not go home. I will send to your house for any things you want, and convey any ^{errand} message to your wife. I will provide you with money for the journey."

There was no help for it, so Jacquard got into the carriage, along ^{entered} with a gendarme who was to take charge of him, and wondered, ^{all manner of things} the way to Paris, what it all meant. On reaching the capital he ^{was what the object} was taken before Napoleon, who received him in a very ^{condescending} manner. Carnot, who was also present, could not at first ^{understand} comprehend the machine, and, turning to the inventor, exclaimed ^{cried out} roughly, "What! do you pretend to do what is beyond the power ^{of all this work} of man? Can you tie a knot on a stretched string?" Jacquard, ^{came to} not at all ^{disconcerted}, explained the construction of his machine ^{thashed} so simply and clearly, as to convince the ^{incredulous} minister that ^{could believe} it could accomplish what he had hitherto deemed an impossibility. ^{to effect}

Jacquard was now employed in the Conservatory of Arts and ^{place for} Manufactures, to repair and keep in order the models and machines. At this time a magnificent shawl was being woven in one of the government ^{works}, for the Empress Josephine. Very costly ^{manufacture} and complicated machinery was employed, and nearly £1,000 had ^{complex} already been spent on it. It appeared to Jacquard that the shawl might be manufactured in a much simpler and less expensive manner. He pondered the subject, made a great many ^{experiments} experiments, and at last succeeded in contriving an improved apparatus. ^{which he}

Lager. Veloc. Marguerite was a French engineer.

He returned to Lyons, to superintend the introduction of his machine for figure-weaving and the manufacture of nets. The former invention was purchased for behoof of the people, and was brought into use very slowly. The weavers of Lyons denounced Jacquard as an enemy of the people, who was striving to destroy their trade, and starve themselves and families, and used every effort to prevent the introduction of his machine. They wilfully spoiled their work, in order to bring the new process into discredit. The machine was ordered to be destroyed in one of the public squares. It was broken to pieces—the iron-work was sold for old metal, and the wood-work for fagots. Jacquard himself had on one occasion to be rescued from the hands of a mob who were going to throw him into the Rhone.

Before Jacquard's death, in 1835, his apparatus had not only made its way into every manufactory in France, but was used in England, Switzerland, Germany, Italy, and America. (Even the Chinese condescended to avail themselves of this invention of a "barbarian.")

At first applied to silk weaving only, the use of Jacquard's machine has since been extended to the bobbin-net, carpets, and other fancy manufactures. By its agency the richest and most complex designs, which could formerly be furnished only by the most skilful labourers, with a painful degree of exertion, and at an exorbitant cost, are now produced with facility by the most ordinary workmen, and at the most moderate price.

Of late years the silk manufacture has greatly improved, both in character and extent. The products of British looms exhibited at the Great Exhibition of 1851 vied with those of the Continent. Every year above £2,000,000 worth of silk is brought to England; and the silk manufacture engages some £50,000,000 of capital, and employs one million of our population.

The silk-worm is the caterpillar of the mulberry-tree moth. This tree seems almost exclusively its own; for while other trees and vegetables nourish myriads of insects, the mulberry tree is seldom attacked by any but this insect. In many parts of its native country, China, it is found on the leaves in the open air;

and it there goes through all its changes without any attention. *to forms.*
 from man, whose only care is to gather in the harvest of silk
 cocoons at the right season. In some parts of China, however, *care, protection*
 the silk-worm requires the same care, in the way of shelter, feed-
ing, and nursing, which in other countries is found necessary to *attention.*
 insure success. *success.*

The silk-worm when first hatched is about a quarter of an inch
 long. If supplied with appropriate food it remains contentedly *properly*
 in one spot. After eight days' feeding and rapid increase in size,
 it prepares to change its skin, which has become too small for its
 body. This operation is facilitated by silken lines which the insect *readily*
casts off and fixes to adjacent objects: these hold the old skin *threads*
tightly while the caterpillar creeps out of it. It immediately begins *troughly*
 again to eat voraciously, and in five days more another change *precisely*
 of skin is necessary. Four of these renewals bring the insect to
 its full size, which is about three inches long. Arrived at *ma-perfect size*
maturity the caterpillar is of a rich golden hue. It then leaves off
 eating and selects a corner in which to spin its cocoon. It first
 forms a loose structure of floss silk, and then within it the closer, *the nature of which*
 texture of its nest, which is of an oval shape. Here it remains *is not close*
 spinning and working until it is gradually lost sight of within its *rawled silk.*
 own beautiful winding-sheet. On the completion of its cocoon it
 changes its skin once more, and then becomes an apparently *inani-*
inani-mate chrysalis, with a smooth brown-skin. It remains in this *seemingly lifeless*
 corpse-like state for a fortnight or three weeks, when it comes
 forth a perfect winged insect—the silk moth. In escaping from
 the cocoon, it pushes the fibres aside: having no teeth, it cannot
gnaw its way out, as is generally supposed. In the perfect form, *cut-*
 the insect takes no food, and only lives two or three days.

The silk of the silk-worm is a fine yellow, transparent gum,
 which hardens as it becomes exposed to the air when issuing from
 the insect's body. The length of filament yielded by a single *filament*
 cocoon is about three hundred yards. This filament, however, is
 so fine that it takes upwards of two thousand cocoons to make a
 pound weight of silk.

THE FLAX PLANT AND LINEN MANUFACTURES.

fields
the flax plant
which affords the raw material of the linen manu-
facture of this country, is a graceful annual, often found growing
wild in our fields. The stalk is very slender, about two feet high,
and has small pointed leaves placed alternately on the stem. It
bears exceedingly delicate pale blue flowers; but these fragile
blossoms soon fade and fall away. When a flax field is in flower*
it is a singularly beautiful sight. The stems, though slender, are
very strong, and the appearance of the plant is light and beauti-
ful, both in form and colour.

The flax plant seems to thrive best in a moist climate. It is
largely and successfully cultivated in the north of Ireland, and in
Lancashire. The seeds are sown in March; and the plants, when
the seeds are ripe in autumn, are pulled up by the roots. If the
object be to save the seeds, the plants are spread out in the sun to
dry; but if the fibrous part be the chief object, the plants are tied
up in bundles and laid to soak in pools or ponds of water. By
this means the pulpy part of the stalks dissolves, and the fibres
are loosened. The bundles are then taken out and spread in a
sunny place till the stalks are quite brittle, when the fibrous part
is easily separated by beating from the rest of the plant. After
various processes of cleaning and combing, it is in a fit state to be
spun into thread.

The chief textures manufactured from flax are known by the
names of linens, damasks, shirtings, &c. The coarser and stronger
kinds are used for sail-cloth, sheeting, canvas, &c. The finest flax
texture is cambric; so named because it was first manufactured in
the town of Cambrai, in the north of France.

Everybody (who has had anything to do with the care of the
linen) knows that linen is preferred for that purpose, and what col-
lections of old linen are made in time of war. During the late
war in the Crimea, gatherings of old linen were made in almost
every household throughout the country, and despatched to the
hospitals in the East, to bind up wounds. The reason is plain:

* From the seeds of the flax plant linseed oil is made.

the fibres of flax are straight and smooth, having no hairs on their surface; therefore, when the material is worn, and has been ^{stuff} often washed, it becomes very soft and cool, and has no fine loose particles to adhere to the open parts of a wound, to cause pain in ^{stick} removing, and prevent the healing. Curing

The north of Ireland, the West Riding of Yorkshire, Fifeshire, and Forfarshire, are the chief seats of the linen manufactures. ^{places}

The quantity of home-grown flax is very small compared with that imported from foreign countries. The chief supplies come from Russia and Belgium. In 1859 no less than 120 millions of pounds were imported from Russia, and 11 millions of pounds from Belgium. The entire annual consumption in this country is ^{quantity used in} about 200 millions of pounds, ^{who are employed in the manufacture of cloth, &c.}

The number of persons directly and indirectly dependent on this branch of industry, in the United Kingdom, is stated to be nearly a million, or one half of those dependent on cotton.

The art of making fine linen out of flax fibres has been known and practised for more than four thousand years. Linen was esteemed above woollen cloth in the East, and is mentioned ^{valued} several times in the Scriptures as an indication of the rank ^{to show} of the wearer. In the parable of the Rich Man and Lazarus, we are told only two things about the outward state of the rich ^{external appearance} man, and they relate to his clothing and his food. He "was ^{well} clothed in purple and fine linen." These words are quite sufficient to inform us of his riches, even if it were not added that "he fared ^{treated} sumptuously every day;" for the woollen cloth dyed purple was ^{splendidly} very rare and costly, only worn by kings and great persons; and the "fine linen" was the most choice and expensive material, to be ^{costly} obtained only by the rich.

Linen was in the earliest period of civilization the most delicate ^{soft} material for garments. The ancient Egyptians were acquainted with the art of spinning and weaving flax in the time of their greatest prosperity, nearly three thousand years ago. Linen cloth was not only used for garments by kings and rich subjects in their lifetime, but the mummies found in the royal tombs of the pyramids at Thebes were wrapped in fine linen, ^{died & re-embalmed covered by winding.}

WOOL.

drawing into thread, largely pursued
happened; old
Kind, initial cloth
leather coat
 THE spinning and weaving of wool were well known in the time of Moses; they were extensively practised by the ancient Greeks and Romans; and when the latter people made the conquest of Britain, they probably introduced these arts into the island; and the inhabitants thus came gradually to exchange the most primitive form of clothing—namely, that of the skins of animals caught in the chase—for a more artificial and more convenient description of covering. The Romans appear to have had a factory at Winchester for supplying cloth to the Roman army. The natives of Britain, however, adopted the new art very slowly; the peasants continued to use garments of leather, and did so till a much later period, for the “buff-jerkin” was in use among the labouring population at the time of the Commonwealth. *the same as our modern cloth*

church-festival commemorating
chief business
inhabitant of
plunder
invasion
patron
city in Lancashire
 The first mention of the sheep in Britain occurs in a public document of the date 712 A.D., in which the price of a sheep is fixed at one shilling until a fortnight after Easter. We read also that the mother of Alfred the Great was skilful in the spinning of wool, and instructed her daughters therein. At later periods the art of spinning wool was considered part of a good education; and the term *spinster*, as applied to unmarried females, indicated the nature of their principal occupation. The origin of the woollen manufacture as a national employment is supposed to date from the time of William the Conqueror, when a number of Flemings, being deprived of their territory by an incursion of the sea, came to England and endeavoured to obtain the patronage of the Queen, who was a native of their country. In this they were successful, and they were established under royal patronage along the northern frontier, in the neighbourhood of Carlisle. Henry I., however, finding that they did not agree with his other subjects, removed them to a district taken from the Welsh, now forming part of Pembrokeshire. Henry II. granted a fair for clothiers and dressers, to be held in the churchyard of Bartholomew Priory for three days—a spot still designated the Cloth Fair. Towards the end

applied much with knifing to the pinning of Roman fabrics

gathering of buyers and sellers

of this reign the manufacture extended to several parts of the kingdom, and companies of weavers were formed in the counties of York, Oxford, Nottingham, Huntingdon, Lincoln, and also at Winchester, which paid fines to the King for the privilege of carrying on their trade, to the exclusion of other towns */ tax.*

During the civil wars of Charles I. the trade *escaped* from the hands of the English into those of our continental rivals, and various descriptions of cloth were manufactured by them which had previously been the sole produce of England. In order to revive the trade, one of those absurd laws was passed which show so much ignorance of the principles of commerce on the part of the Legislature. In 1666 it was enacted that every person should be buried in a shroud composed of wool alone, under the forfeiture of £5 (to the poor of the parish.) This law continued in force about one hundred and thirty years. In the year 1685, that most unjust law, commonly known as the Revocation of the Edict of Nantes, was passed in France, whereby upwards of 600,000 Protestants, being deprived of the liberty of worshipping God according to the light of Scripture truth and of their own conscience, were compelled to expatriate themselves. Of this large number, no less than 50,000 sought refuge in England, where they were well received. Many of them were skilful in the manufacture of cloth, and improved the lighter textures, which at that time were in great demand. From that time to the present, the woollen trade has continued steadily to increase in prosperity. *as body of men with power to make great alterations in the law.*

The British woollen manufacture gives employment to about one million persons, and constitutes one fourth part of our textile manufactures. The chief seats are Leeds, Huddersfield, Bradford, Halifax, Wakefield, &c. *real of the chief.*

The chief supplies of colonial and foreign wool come from Australia, Cape Colony, the East Indies, and South America. *formed by weaving.*

The wool of the alpaca has long been in demand, on account of its silky texture. The alpaca is a species of llama, found in Peru and other parts of South America. The animal has been successfully introduced into Australia, and will doubtless in a few years become an important source of wealth to our colonies. *in animals*

PENNY POSTAGE.

"He comes, the herald of a noisy world, ^{messengers, busy}
 News from all nations ^{intelligible, hopped together} lurching at his back;
 Houses in ashes, and the fall of stocks; ^{reminded him} ~~decease of value~~ ^{of securities}
 Births, deaths, and marriages; epistles wet ^{letter, more killed}
 With tears that trickled down the writer's cheeks ^{than}
 Fast as the periods of his fluent quill; ^{complete sentence}
 Or charged with am'rous sighs of absent swains, ^{hearing, full of love}
 Or nymphs responsive." ^{girl ready to answer} COWPER. 1763

proof
 forcible proof
 long steps
 distribution
 being
 increased
 strong
 Charles
 faced
 being
 imperfectly done
 fault, order
 special letter
 officers, in
 ploughs
 lease
 continued
 issuing from
 a lot requires to be changed his clothes from time to time

THE growth of the postal system is a sure measure of the progress of industry, commerce, education, and all that goes to make up the sum of civilization. There is no more striking illustration to be found of the strides which our country has made in that direction since the century began than the introduction of a cheap and rapid delivery of letters, and the craving which it has at once satisfied and augmented. Nothing gives us so forcible an idea of the difference between the Britain of the present day and the Britain of the Caroline, or even of the Georgian period, than the contrast between the postal communication of those times and of our own. We wonder how people got on in the days when the postman was the exclusive messenger of the king, and when even majesty was so badly served that one old postmaster* had to write in self-exculpation of some delay, "When placards are sent [to order the immediate forwarding of some state despatches] the constables many times be fayne to take the horses oute of plowes and cartes; wherein," he gravely adds, "can be no extreme diligence." It was a sure sign that the country was going ahead, when Cromwell found it worth while to establish posts for the people at large, and was able to farm out the Post Office for £10,000 a year. The profits of that establishment were doubled by the time the Stuarts got back to the throne, and more than doubled again before the close of the seventeenth century. The country has kept on growing out of system after system, like a man had out of his clothes, and at different times has had new ones

* Brian Tuke, master of the post to King Henry VIII.

when the postman went to carry letters of the King's

made to its measure. Brian Tuke's easy plan of borrowing farmers' ^{size} horses to mount his emissaries on, gave place to regular relays ^{agents} of post-boys and post-horses; and in course of time, when the ^{regular} robbery of the mails by sturdy highwaymen had become almost ^{regular} the rule, and their safe conveyance the exception, post-boys were ^{usual} in turn supplanted by a system of stage-coaches, conveyed by an ^{order} armed guard. This was thought a great advance; and so it was. ^{guards} A pushing, zealous man, named Palmer, originated the scheme ^{carrying} ^{express} ^{into} ^{existence} ^{business}. Amongst many other ^{carrying} ^{express} ^{into} ^{existence} ^{business} avocations, he found time to travel on the outside of stage-coaches, for the sake of talking with the coachmen and observing the route, here, there, and everywhere, all over ^{way} England, and thus matured all the details of his plan from ^{perfect} personal experience. "None but an enthusiast," said Sheridan ^{minute} ^{particular} ^{information} a rapture of admiration in the House of Commons, "could have ^{about} ^{person} ^{thought} ^{of} ^{it} conceived, none but an enthusiast could have ^{practically} entered, none but an enthusiast could have carried out, such a ^{super} ^{introduction} system." — *Richard Brinsley was an enthusiast.*

Still, in spite of the exactitude with which Palmer's scheme ^{accuracy} was declared to ^{fit} the wants of the country, it soon began to be ^{met} ^{grown} ^{out} ^{of}, like the rest. It became too short, too tight, too ^{useful} ^{close} straitened every way, and impeded the circulation of ^{correspondence} ^{narrow} ^{transmission} ^{channel} ^{of} letters. The cost of ^{letter} ^{charge} postage was too high, the mode of delivery too slow; and the consequence was, that people either repressed their desire to write ^{checked} letters, or sent them through some cheaper and illegitimate ^{lawful} channel. Sir Walter Scott knew a man who recollected the mail from London reaching Edinburgh with only a single letter! Of all the millions of the modern Babylon, only one solitary ^{London} individual had got anything to say to anybody in the metropolis of the sister kingdom worth paying postage for. "We look back ^{retrospect} now," says a popular writer, "with a sort of amazed compassion ^{curious} ^{pathy} to the old crusading times, when warrior husbands and their ^{married} ^{soldiers} wives, gray-headed parents and their brave sons, parted with the knowledge that it must be months or years before they could hear of one another's existence. We wonder how they bore the depth of silence!"

exertion
adequately
as a testimony
year
not varying
respect
making
anything
feelings
inner force
rough shock
esteem
low rate
reward
high order
achievement
get the way
go to
stroke
can
ex
de
ay
ph
a
is
the

On the 17th of August 1839, through the efforts of Mr. Rowland Hill (why is not the anniversary kept with rejoicings?) penny postage became the law of the land.

During the latter part of the year a uniform fourpenny rate was charged, by way of accustoming people to the cheap system, and saving official feelings from the rude shock of a sudden descent from the respectable rate of a shilling to the vulgar one of a penny. On the 10th January 1840 the penny system came into force.

In 1846 a public testimonial of £13,000 was presented to Mr. Hill, in acknowledgment of his distinguished services to the country; and he was afterwards made a Knight of the Bath (Civil Side).

Cheap postage has now been fairly tried, and must be pronounced a grand success. It has become part and parcel of our national life, and has been found precious as the gift of a new faculty. We should miss the loss of cheap and rapid correspondence with our friends and acquaintances almost as much as the loss of speech or the loss of sight. The postman has now to find his way to the humblest, poorest districts, where twenty years back his knock was never heard; and what was once a rare luxury, has now come to be considered a common necessary of life. Instead of only seventy-six millions of letters passing through the post in a year, as in 1838, the number has risen to between five and six hundred millions! On the average, every individual in England receives twenty-two letters a year (in London the individual average is forty-six), in Scotland sixteen, and in Ireland seven.

The gross revenue derived from that source is over £3,000,000; and some of the railway companies make more money out of the conveyance of the mails in a year than the annual revenue of the whole kingdom in the days of William and Mary.

ORIGIN AND PROGRESS OF THE ELECTRIC TELEGRAPH.

It has never been difficult for men to devise or interpret symbols. ^{involuntary, expressive}
 The great difficulty is to traverse space and time with the symbol, ^{convenient, passes over distance}
 —to give meaning to the first four, not the last five letters, of the word *Tele-graph*.

Now the swiftness of man's foot can do much for us, and still more the swiftness of the horse or the camel. And when these fail us we can employ the wing of the carrier-pigeon; and when ^{does not suffice} that fails, the steamer and the railway locomotive will take up the ^{as a substitute} running for us. (But all are too slow for a generation so fast as ^{the railway carriage} ours.) Sound is so insufficient, that we use it only for short distances. And even Light, though no laggard, is stopped in its ^{slow} progress by the curvature of the earth's surface; besides being nearly useless as a signal at night, and totally so in fogs or cloudy ^{utterly useless} weather. The only agent that will serve our purpose is Electricity, ^{active power} It is far swifter than sound or light. It is not afraid of the dark, and it can travel in all weathers. It can out-rival even the goblin ^{spirit} messenger in the old ballad, of whom we are told, — *long*

“And when he came to broken bridge,
 He bent his bow and swam;
 And when he came to grass growing,
 Set down his feet and ran, ^{priced}
 And when he came to Greenwood Hall,
 Would neither knock nor call;
 But set his bent bow to his breast, ^{attach}
 And lightly leaped the wall ^{triumphantly}.”

The highway for this subtle spirit—which, together with the ^{their} generating and propelling apparatus at the one end, and the ^{producing, driving, forming, rearranging, re-arranging} receiving and recording instruments at the other, constitutes the Electric Telegraph—is in one sense the lineal descendant of the older methods of speaking and writing to a distance. But its purely scientific parents are the Compass Needle and the Electrical Machine.

As the guide of Columbus to the New World, the magnetic

needle was the precursor and pioneer of the Telegraph. Silently, and as with finger on its lips, it led him across the waste of waters. And the time cannot now be distant when, as an integrant of the Telegraph, it will remove its finger and break silence, so that the inhabitants of the old and the new hemispheres may exchange affectionate greetings. The quivering magnetic needle which lies in the coil of the galvanometer, is the tongue of the Electric Telegraph, and already engineers talk of it as speaking.

The magnet, however, did not till 1820 directly aid the Telegraph. What, then, of the other parent? We strike sharply, in beginning, on a definite date, 1600, when Gilbert of Colchester introduced the new word, and the all but new science, Electricity. The science, thus recognised and titled, made rapid progress. The lump of amber was changed for a fragment of sulphur, which soon grew into a globe, and was by-and-by replaced by a glass sphere, a cylinder, or a plate, whirled rapidly, and constituting an Electrical Machine. By the beginning of the eighteenth century, men knew well how to produce electricity. And soon afterwards they discovered that some bodies conduct, and others do not conduct

it; so that they were in possession of the essential halves of an electrical highway, namely, conductors free through half their length, and insulated through the other half by non-conductors.

In 1745 the Leyden Jar was stumbled on. It was literally an electrical condenser, and did as much to enhance the power of the friction-machine as Watt's steam-condenser did to enlarge that of the steam-engine. Provided with the Leyden Jar, the next two important telegraphic discoveries were speedily made: the one, that electricity traverses a metallic wire with inconceivable rapidity; the other, that it travels with equal celerity through earth or water. Here, then, were two-thirds of the Telegraph supplied; the message-sender was there, and so was the message-carrier. Why was not a message-receiver also provided? The

fault lay with the sender. Friction-electricity is so brief in duration, and so intense and impetuous, that it cannot be induced to take a long journey. The best conductors, in their best state of insulation, are unwelcome to it. If there is the least obstacle in any part of

+ one who goes before to prepare the way for another.

unwillingly

hindrance

electric machine
break both
magnetic
wholly
abandoned
mass
developed
supplanted
plate

insuperable
separated
glass bottle
lighted
increase

permitted

rapidity

lasting force
short a time
extreme
pushing with
force distance
unfavourable

its path, it turns off, as it were, at a side-station, and returns by deflects the shortest route with its message undelivered.

“Owing to this hinderance, Electrical Telegraphy remained at a stand-still for half a century. But in 1800 the Voltaic Battery, already some years in use, was ascertained to produce a continuous stream of electricity, far less impetuous and reluctant to travel, ^{slow, unwieldy} than the electricity of the friction-machine. We had to wait, however, twenty years longer, till two famous additional discoveries were made: the one, that the electric current deflects the compass ^{turns of} needle; the other, that the electric current develops magnetism. ^{unfolds} Our earliest Electric Telegraph was electro-magnetic; and to this day the majority of Telegraphs employ electricity to produce signals, either by moving a permanent magnet, or by making a look-alike temporary one.

The land Telegraph was now in essentials complete; but ^{a first principle} a submarine Telegraph was still impossible, for want of a good ^{under water} insulator. (Great historical importance, accordingly, attaches to ^{the} the importation, in 1843, of gutta-percha, which enabled us to have a submarine cable as early as 1850; and although the peculiar electrical difficulties of traversing the Atlantic have not yet been ^{surmounted} overcome, there can be no doubt that, sooner or later, an effective Atlantic cable will be laid. We need not be surprised nor lose heart, if we have to make as many voyages as Columbus ^{discovered} before we rival him in bringing the Old and New Worlds together. ^{try to equal}

In spite, however, of all difficulties, we have done wondrous things already. Telegraph lines now stretch from Norway to the shores of Africa; from Nova Scotia to the Gulf of Mexico; from Great Britain to Constantinople:—the greater part of Europe and of North America is netted over with them; a considerable part ^{forming into a network} of Asia and Australia; and a portion of Africa. The lines already finished extend over more than a hundred thousand miles, and include many hundred thousand miles of wire. The metal in them would constitute, if massed together, a mountain weighing more than fifty thousand tons.

a poem set to music **THE CANTATA FOR THE OPENING OF THE GREAT EXHIBITION.**

(1862.)

raise aloft - UPLIFT a thousand voices full and sweet, *and*
original contrivance in In this wide hall with earth's inventions stored, *extensive empire*
sing in praise of And praise th' invisible universal Lord, *rules*
permits Who lets once more in peace the nations meet,
immense number Where Science, Art, and Labour have outpoured *sent for to*
 Their myriad horns of plenty at our feet *collected together*

deplor'd Oh, silent father of our kings to be,
for exhibition Mourn'd in this golden hour of jubilee, *public festivity*
 For this, for all, we weep our thanks to thee: *mobile projects*

writing The world-compelling plan was thine, 1
the place was so extensive And, lo! the long laborious miles
that it took a pedestrian Of Palace; lo! the giant aisles, *world's exhibition*
to walk through it, it was Rich in model and design; — *extraordinary in size*
ing the various exhibit Harvest-tool and husbandry, *husbandry*
abounding; plow, plan Loom, and wheel, and engin'ry; *engines in general*
reaping machine (Secrets of the sullen mine,) *earth*
mines Steel and gold, and corn and wine;
coarse textures Fabrics rough, or fairy fine, *fine texture*
things produced in the country (Sunny tokens of the line;) *equator*
regions Polar marvels, and a feast
 Of wonder, out of West and East;
 And shapes and hues of art divine! —
 (All of beauty, all of use,) *equator*
 That (one fair planet) can produce;
 Brought (from under every star,)
 Blown from over every main;
 And mixt (as life is mixt with pain,) —
 The works of peace with works of war.

And is the goal so far away *the time of universal peace*
 Far! how far no man can say;—

[Let us have our dream to-day.] *the present recession leads us
 to imagine that happy condition when
 when there will be no more sorrow, pain
 and man and every man will find
 his own happiness in that
 of all: wise people*

*thoughtfully
 reluctant*

O ye, the wise who think, the wise who reign! *of all: wise people*
 From growing Commerce loose her latest chain, *commerce, trade, and*
 And let the fair white-winged peacemaker fly *commerce*
 To happy havens under all the sky, *of all her powers, throughout the
 whole world.*
 And mix the seasons and the golden hours, *precious*
 Till each man find his own in all men's good, *his own good*
 And all men work in noble brotherhood,— *carry on business, or melted
 ardently*
 Breaking their mailed fleets and armed towers, *destroying, armed;*
 And ruling by obeying nature's powers, *fortified fortresses.*
 And gathering all the fruits of peace, and crowned adorned
 with all her flowers. *result of peace*

TENNYSON.

ROUND THE WORLD.

PART I.

THE LAUNCHING OF THE SHIP.

* * * * *
ALL is finished ! and at length
Has come the bridal day
Of beauty and of strength.
To-day the vessel shall be launched !
With fleecy clouds the sky is blanced,
And o'er the bay,
Slowly, in all his splendours dight,
The great Sun rises to behold the sight.

The Ocean old,
Centuries old,
Strong as youth, and as uncontrolled,
Paces restless to and fro,
Up and down the sands of gold.
His beating heart is not at rest ;
And far and wide,
With ceaseless flow,
His beard of snow
Heaves with the heaving of his breast.

He waits impatient for his bride.
There she stands,
With her foot upon the sands,

Decked with flags and streamers gay,
 In honour of her marriage day,
 Her snow-white signals, fluttering, blending,
 Round her like a veil descending,
 Ready to be
 The bride of the gray old Sea.

* * * *

Then the master,
 With a gesture of command,
 Waved his hand ;
 And at the word,
 Loud and sudden there was heard,
 All around them and below,
 The sound of hammers, blow on blow,
 Knocking away the shores and spurs.
 And see ! she stirs !
 She starts,—she moves,—she seems to feel
 The thrill of life along her keel,
 And, spurning with her foot the ground,
 With one exulting, joyous bound,
 She leaps into the Ocean's arms !

LONGFELLOW.

THE EDDYSTONE LIGHT-HOUSE.

" Far in the bosom of the deep,
 O'er these wild shelves my watch I keep;
 A ruddy gleam of changeful light,
 Bound on the dusky brow of night;
 The seaman bids my lustre hail,
 And scorns to strike his tim'rous sail."—SCOTT.

THERE are few enterprises more heroic or beneficent than those connected with the construction and management of light-houses. From first to last—from the rearing of the column on the rock to the nightly vigil in attendance on the lamps—the intrepidity and endurance of all concerned are called into play ; and the awful perils and stirring adventures they experience impart to the story of their labours a thrilling and romantic interest. Most sea-girl beacons

have their legends, and the narrative of the erection of the Eddystone may be selected as a type of the rest.

About fourteen miles south from Plymouth, and ten from the Ram's Head, on the Cornish coast, lies a perilous reef of rocks, against which the long rolling swell of the Atlantic waves dashes with appalling force, and breaks up into those swirling eddies from which the reef is named—the Eddystone. Upon these treacherous crags many a gallant vessel has foundered, within sight of the shore it had scarcely quitted or was just about to reach. Situated in the midst of a much frequented track, the rapid succession of calamities at the Eddystone was not long in awakening men's minds to the necessity of a warning light. The exposure of the reef to the wild fury of the Atlantic, however, and the small extent of the surface of the chief rock, rendered the construction of a light-house in such a situation a work of great, or rather, as it was long considered, insuperable difficulty.

The project was long talked of before any one was found daring enough to attempt the task; and when at length, in 1696, Henry Winstanley stepped forward to undertake it, he might have been thought of all others the very last from whose brain so serious a conception would have emanated. The great hobby of his life had been to fill his house at Littlebury, in Essex, with mechanical devices of the most absurd and fantastic kind. If a visitor, retiring to his bed-room, kicked aside an old slipper on the floor, purposely thrown in his way, up started a ghost of hideous form! If, startled at the sight, he fell back into an arm-chair placed temptingly at hand, a pair of gigantic arms would instantly spring forth and clasp him a prisoner in their rude embrace! Tired of these disagreeable surprises, the astonished guest perhaps took refuge in the garden, and sought repose in a pleasant arbour by the side of a canal; but he had scarcely seated himself, when he was suddenly set adrift on the water, where he floated about till his whimsical host came to his relief. Such was the man who now entered on one of the most formidable of all engineering enterprises.

Although Winstanley's light-house was but a slight affair com-

pared with its successors, it occupied six years in the erection—the frequent rising of the sea over the rock, and the difficulty and danger of passing to and from it greatly retarding the operations, and rendering them practicable only during a short summer season. For ten or fourteen days after a storm had passed, and when all was calm elsewhere, the ground-swell from the Atlantic was often so heavy on the reef that the waves sprang more than two hundred feet into the air, burying the works from sight.

The first summer was spent in boring twelve holes in the rock, and fixing therein twelve large irons as a holdfast for the works that were to be reared. The next season saw the commencement of a round pillar, which was to form the steeple of the tower as well as afford protection to the workmen while at their labours. When Winstanley bade farewell to the rock for that year, the tower had risen to the height of twelve feet; and, resuming operations next spring, he continued to build till it reached the height of eighty feet.

Having got the apartments fit for occupation, and the lantern set up, Winstanley determined to take up his abode there with his men, in order that no time might be lost in going to and from the scene of their labours. The first night they spent on the rock a great storm arose, and for eleven days it was impossible to hold any communication with the shore. “Not being acquainted with the height of the sea’s rising,” writes the architect, “we were almost drowned, and our provisions were in as bad a condition, though we worked night and day as much as possible to make shelter for ourselves.” The storm abating, they went on shore for a little repose; but soon returning, they set to work again with undiminished energy.

On the 14th November of the same year (1698) Winstanley lighted his lantern for the first time. A long period of boisterous weather followed, and it was not till three days before Christmas that he and his men were able to quit their dreary abode, being “almost at the last extremity; but by good Providence then two boats came with provisions and the family that were to take care of the light: and so ended this year’s work.”

It was soon found that the sea rose to a much greater height than had been anticipated, the lantern, although sixty feet above the rock, being often "buried under water." Winstanley was therefore under the necessity of enlarging the tower and carrying it to a greater elevation. The fourth season, accordingly, was spent in incasing it with fresh out-works, and adding forty feet to its height. This proved too much for its strength to bear; and in the course of three years the winds and waves had made sad havoc of the unstable fabric.

In November 1703 Winstanley went out to the rock himself, accompanied by his workmen, to commence the repairs. As he was putting off in a boat from Plymouth, a friend, who had for some time been watching the condition of the light-house with much anxiety, mentioned to him his suspicion that it was in a bad state, and could not last long. Winstanley, full of faith in the stability of his work, replied that "he only wished to be there in the greatest storm that ever blew, that he might see what effect it would have on his structure." And with these words he shoved off from the beach, and made for the rock.

With the last gleams of day-light, before the night fell and shrouded it from view, the tower was seen rising proudly from the midst of the waters;—before the dawn it had disappeared for ever, and the waves were lashing fiercely round the bare bleak ledge of the fatal rock! Poor Winstanley had had his presumptuous wish only too fully realized. The storm of the 26th November was one of the most fearful that have ever ravaged our shores. The whole coast suffered severely from its fury, and when the morning came nothing remained of the light-house, architect, or workmen, save a fragment of chain-cable wedged firmly into a crevice of the rock.—The disappearance of the warning light was quickly followed by the wreck of a large homeward-bound man-of-war, and the loss of nearly all her crew, upon the rocks.

This first Eddystone light-house was a strange, fantastic-looking structure, deficient in every element of stability, and the wonder was, not that it fell in pieces as it did, but that it was able to withstand so long the boisterous weather of the Channel. But if

of little merit as an architect, Winstanley at least deserves respect, as Smeaton remarks, for the heroism he displayed in undertaking "a piece of work that before had been looked on as impossible."

For four years the Eddystone remained bare and untenanted, till, in the summer of 1706, the erection of a new light-house was commenced, under the superintendence of John Rudyerd, by profession a silk-mercier in Ludgate Hill, but by natural genius an engineer of considerable merit. With such skill and energy did he apply himself to the work, that before two summers were over his tower was completed, and its friendly light beamed over the troubled waters and sunken crags. Rudyerd's light-house was entirely of wood, weightied at the base by a few courses of mason-work, and ninety-two feet in height. In form, it was a smooth, solid cone, of elegant simplicity, unbroken by any of those ornamental out-works which offered the wind and sea so many points to lay hold of in Winstanley's whimsical pagoda. Smeaton speaks of Rudyerd's tower as a masterly performance; and had it not been destroyed by fire, forty-six years after its erection, there seems little reason to suppose it might not have been standing to this day,—although, no doubt, the ravages of the worm in the wood would have demanded frequent repairs.

Such was the fate of the second light-house on the Eddystone,—one element avenging, as it were, the conquest over another.

In spite of the fatality which seemed to attend these light-houses, the lessees of the Eddystone—for it was then in private hands, and did not come into the hands of the Trinity House till many years after—resolved to make another attempt; and this time they selected as the architect one of the ablest professional men of the day, and, with wise liberality, adopted his advice to build it of stone.

Smeaton truly belonged to the class of Heaven-gifted engineers. From his earliest years the bent of his genius unmistakably revealed itself. Before he was six years old, he one day terrified his parents by climbing to the top of a barn to fix up some contrivance he had put together, after the fashion of a wind-mill; and on another occasion he constructed a pump that raised water, after

having watched some workmen sinking one. As he grew older, his efforts took a more ambitious range, but were all equally remarkable for their originality and success. His father had destined him for the bar; but his inclination for engineering was so irresistible, that he allowed him to resign all chance of the woolsack and set up in business as a mathematical instrument maker. He gradually advanced to the profession of civil engineering,—which he was the first man in England to pursue, and which he may be said to have created.

It was in 1756 he commenced the construction of the great work which may be regarded as the monument of his fame. Having decided that his light-house should be of stone, the next point to be settled was its form. His thoughts, he tells us in his book, instinctively reverted to the analogy between a light-house shaft and the trunk of a stately oak. He remarked the spreading roots taking a broad, firm grip of the soil; then the rise of the swelling base, gradually lessening in girth in a graceful curve; and then, a preparation being required for the support of the boughs, the renewed swelling of diameter which takes place; and he held that, cutting off the branches, we have in the trunk of an oak a type of such a light-house column as is best adapted to resist the influence of the winds and waves. Whether or not Smeaton arrived at the form of his light-house, which has since become the model for all others, from this fanciful analogy, its appearance rising from the rock presents a strong resemblance to a noble tree stripped of its boughs and foliage.

Smeaton commenced the undertaking by visiting the rock in the spring of 1756, and accurately measuring its very irregular surface; and, in order to insure exactness in his plans, he made a model of it. In the summer of the same year he prepared the foundation, by cutting trenches in the rock, into which the blocks of stone were to be dove-tailed. The first stone was laid in June 1757, and the last in August 1759. Of that period there were only 431 days when it was possible to stand on the rock, and so small a portion even of these was available for carrying on the work, that it is calculated the building in reality occupied but six

weeks ! The whole was completed without the slightest accident to any one ; and so well were all the arrangements made, that not a minute was lost by confusion or delay amongst the workmen.

The tower measures 86 feet in height, and 26 feet in diameter at the level of the first entire course, the diameter under the cornice being only 15 feet. The first twelve feet of the structure form a solid mass of masonry,—the blocks of stone being held together by means of stone joggles, dove-tailed joints, and oaken tree-nails. All the floors of the edifice are arched ; to counteract the possible outburst of which, Smeaton bound the courses of his stone-work together by belts of iron chain ; which being set in grooves while in a heated state, on cooling, of course, tightened their clasp on the tower. Throughout the whole work remarkable ingenuity is displayed in obtaining the greatest amount of resistance, and combining the two great principles of strength and weight,—technically speaking, cohesion and inertia.

On the 16th October 1759 the warning light once more, after an interval of four years, shone forth over the troubled waters from the dangerous rock. But it was a feeble illumination at the best, for it came from only a group of tallow candles. It was better than nothing, certainly ; but the exhibition of a few glimmering candles was surely a paltry conclusion to so stupendous an undertaking. For many years, however, no stronger light gleamed from the tower, till, in 1807, when it passed from the hands of private proprietors into the charge of the Trinity House, the candles were exchanged for Argand burners, with silvered copper reflectors.

Imperfect, however, as used to be the lighting apparatus, the Eddystone Beacon has always been a great boon to those "that go down to the sea in great ships," and has robbed these perilous waters of much of their terror. We can readily sympathize with the exultation of the great engineer who reared it, when, standing on the Hoe at Plymouth, with his telescope, he watched the enormous waves in powerless fury dash against his tower, and "fly up in a white column, inwrapping it like a sheet, rising at the least to double its height, and totally intercepting it from

sight." It is now more than a hundred years since Smeaton's Light-house first rose upon the Eddystone; but, in spite of the many furious storms which have put its stability to rude and searching proof, it still lifts its head proudly over the waves, and shows no signs of failing strength.

THE LIGHT-HOUSE.

THE rocky ledge runs far into the sea,
And on its outer point, some miles away,
The light-house lifts its massive masonry,—
A pillar of fire by night, of cloud by day.

Even at this distance I can see the tides,
Upheaving, break unheard along its base;—
A speechless wrath, that rises and subsides
In the white lip and tremour of the face.

And as the evening darkens, lo! how bright,
Through the deep purple of the twilight air,
Beams forth the sudden radiance of its light,
With strange, unearthly splendour in its glare.

Not one alone;—from each projecting cape
And perilous reef along the ocean's verge,
Starts into life a dim, gigantic shape,
Holding its lantern o'er the restless surge.

Like the great giant Christopher, it stands
Upon the brink of the tempestuous wave,
Wading far out among the rocks and sands,
The night-o'ertaken mariner to save.

And the great ships sail outward and return,
Bending and bowing o'er the billowy swells;

And ever joyful, as they see it burn,
They wave their silent welcomes and farewells.

They come forth from the darkness, and their sails
Gleam for a moment only on the blaze;
And eager faces, as the light unveils,
Gaze at the tower, and vanish while they gaze.

The mariner remembers when a child,
On his first voyage, he saw it fade and sink;
And, when returning from adventures wild,
He saw it rise again o'er ocean's brink.

Steadfast, serene, immovable, the same
Year after year, through all the silent night,
Burns on for evermore that quenchless flame,
Shines on that unextinguishable light!

It sees the ocean to its bosom clasp
The rocks and sea-sand with the kiss of peace;—
It sees the wild winds lift it in their grasp,
And hold it up, and shake it like a fleece.

The startled waves leap over it; the storm
Smites it with all the scourges of the rain;
And steadily against its solid form
Press the great shoulders of the hurricane.

The sea-bird wheeling round it, with the din
Of wings and winds and solitary cries,
Blinded and maddened by the light within,
Dashes himself against the glare, and dies.

A new Prometheus, chained upon the rock,
Still grasping in his hand the fire of Jove,
It does not hear the cry, nor heed the shock,
But hails the mariner with words of love.

"Sail on!" it says, "sail on, ye stately ships!
And with your floating bridge the ocean span;
Be mine to guard this light from all eclipse,—
Be yours to bring man nearer unto man!"

LONGFELLOW.

THE SHIP.

AND, lo! upon the murmuring waves
A glorious shape appearing!
A broad-winged vessel, through the shower
Of glimmering lustre steering!
As if the beauteous ship enjoyed
The beauty of the sea,
She lifteth up her stately head,
And saileth joyfully.
A lovely path before her lies,
A lovely path behind;
She sails amid the loveliness
Like a thing with heart and mind.
Fit pilgrim through a scene so fair,
Slowly she beareth on;
A glorious phantom of the deep,
Risen up to meet the moon.
The moon bids her tenderest radiance fall
On her wavy streamer and snow-white wings;
And the quiet voice of the rocking sea,
To cheer the gliding vision sings.
Oh! ne'er did sky and water blend
In such a holy sleep,
Or bathe in brighter quietude
A roamer of the deep.
So far the peaceful soul of heaven
Hath settled on the sea;
It seems as if this weight of calm
Were from eternity.

O world of waters ! the steadfast earth
Ne'er lay entranced like thee !

Is she a vision wild and bright,
That sails amid the still moonlight
At the dreaming soul's command ?
A vessel borne by magic gales,
All rigged with gossamery sails,
And bound for Fairy-land ?

* * * * *
She seems to hold her home in view,
And sails as if the path she knew ;
So calm and stately in her motion,
Across th' unfathomed, trackless ocean.

JOHN WILSON.

AMONG THE SHOALS.

THE confident assurances which Griffith had given to the pilot, respecting the qualities of his vessel and his own ability to manage her, were fully realized by the result. The helm was no sooner put a-lee than the huge ship bore up gallantly against the wind, and, dashing directly through the waves, threw the foam high into the air, as she looked boldly into the very eye of the wind ; and then, yielding gracefully to its power, she fell off on the other tack, with her head pointed from those dangerous shoals that she had so recently approached with such terrifying velocity. The heavy yards swung round, as if they had been vanes to indicate the currents of the air, and in a few moments the frigate again moved with stately progress through the water, leaving the rocks and shoals behind her on one side of the bay, but advancing towards those that offered equal danger on the other.

During this time the sea was becoming more agitated, and the violence of the wind was gradually increasing. The latter no longer whistled amid the cordage of the vessel, but it seemed to howl surlily as it passed the complicated machinery that the frigate

obtruded on its path. An endless succession of white surges rose above the heavy billows, and the very air was glittering with the light that was disengaged from the ocean. The ship yielded each moment more and more before the storm, and, in less than half an hour from the time that she had lifted her anchor, she was driven along, with tremendous fury, by the full power of a gale of wind. Still the hardy and experienced mariners, who directed her movements, held her to the course that was necessary to their preservation; and still Griffith gave forth, when directed by their unknown pilot, those orders that turned her in the narrow channel where safety was alone to be found.

So far the performance of his duty appeared easy to the stranger, and he gave the required directions in those still, calm tones, that formed so remarkable a contrast to the responsibility of his situation. But when the land was becoming dim in distance as well as darkness, and the agitated sea was only to be discovered as it swept by them in foam, he broke in upon the monotonous roaring of the tempest with the sounds of his voice, seeming to shake off his apathy and rouse himself to the occasion.

"Now is the time to watch her closely, Mr. Griffith," he cried; "here we get the true tide and the real danger. Place the best quarter-master of your ship in those chains, and let an officer stand by him, and see that he gives us the right water."

"I will take that office on myself," said the captain; "pass a light into the weather main chains."

"Stand by your braces!" exclaimed the pilot, with startling quickness. "Heave away that lead."

These preparations taught the crew to expect the crisis, and every officer and man stood in fearful silence at his assigned station, awaiting the issue of the trial. Even the quarter-master gave out his orders to the men at the wheel in deeper and hoarser tones than usual, as if anxious not to disturb the quiet and order of the vessel.

While this deep expectation pervaded the frigate, the piercing cry of the leadsmen, as he called, "By the mark seven!" rose above the tempest, crossed over the decks, and seemed to pass away to

leeward, borne on the blast like the warnings of some water spirit.

"Tis well," returned the pilot, calmly; "try it again."

The short pause was succeeded by another cry, "and a half-five!"

"She shoals! she shoals!" exclaimed Griffith; keep her a good full."

"Ay! you must hold the vessel in command now," said the pilot, with those cool tones that are most appalling in critical moments, because they seem to denote most preparation and care.

The third call of "By the deep four!" was followed by a prompt direction from the stranger to tack.

Griffith seemed to emulate the coolness of the pilot in issuing the necessary orders to execute this manœuvre.

The vessel rose slowly from the inclined position into which she had been forced by the tempest, and the sails were shaking violently, as if to release themselves from their confinement, while the ship stemmed the billows, when the well-known voice of the sailing master was heard shouting from the fore-castle,—

"Breakers! breakers, dead ahead!"

This appalling sound seemed yet to be lingering about the ship when a second voice cried,—

"Breakers on our lee bow!"

"We are in a bight of the shoals, Mr. Gray," said the commander. "She loses her way; perhaps an anchor might hold her."

"Clear away that best bower," shouted Griffith through his trumpet.

"Hold on!" cried the pilot, in a voice that reached the very hearts of all who heard him; "hold on everything."

The young man turned fiercely to the daring stranger, who thus defied the discipline of his vessel, and at once demanded,—

"Who is it that dares to countermand my orders? Is it not enough that you run the ship into danger, but you must interfere to keep her there? If another word——"

"Peace, Mr. Griffith," interrupted the captain, bending from the rigging, his gray locks blowing about in the wind, and adding a

look of wildness to the haggard care that he exhibited by the light of his lantern ; "yield the trumpet to Mr. Gray ; he alone can save us."

Griffith threw his speaking-trumpet on the deck, and as he walked proudly away, muttered, in bitterness of feeling,—

"Then all is lost indeed ; and among the rest, the foolish hopes with which I visited this coast."

There was, however, no time for reply ; the ship had been rapidly running into the wind, and as the efforts of the crew were paralyzed by the contradictory orders they had heard, she gradually lost her way, and in a few seconds all her sails were taken aback.

Before the crew understood their situation, the pilot had applied the trumpet to his mouth, and, in a voice that rose above the tempest, he thundered forth his orders. Each command was given distinctly, and with a precision that showed him to be master of his profession. The helm was kept fast, the head-yards swung up heavily against the wind, and the vessel was soon whirling round on her heel, with a retrograde movement.

Griffith was too much of a seaman not to perceive that the pilot had seized, with a perception almost intuitive, the only method that promised to extricate the vessel from her situation. He was young, impetuous, and proud—but he was also generous. Forgetting his resentment and his mortification, he rushed forward among the men, and by his presence and example added certainty to the experiment. The ship fell off slowly before the gale, and bowed her yards nearly to the water, as she felt the blast pouring its fury on her broadside ; while the surly waves beat violently against her stern, as if in reproach at departing from her usual manner of moving.

AMONG THE SHOALS—Concluded.

The voice of the pilot, however, was still heard, steady and calm, and yet so clear and high as to reach every ear ; and the obedient seamen whirled the yards at his bidding, in despite of the tempest, as if they handled the toys of their childhood. When the ship

had fallen off dead before the wind, her head-sails were shaken, her after-yards trimmed, and her helm shifted, before she had time to run upon the danger that had threatened, as well to leeward as to windward. The beautiful fabric, obedient to her government, threw her bows up gracefully towards the wind again, and as her sails were trimmed, moved out from amongst the dangerous shoals, in which she had been embayed, as steadily and swiftly as she had approached them.

A moment of breathless astonishment succeeded the accomplishment of this manœuvre, but there was no time for the usual expressions of surprise. The stranger still held the trumpet, and continued to lift his voice amid the howlings of the blast, whenever prudence or skill directed any change in the management of the ship. For an hour longer there was a fearful struggle for their preservation, the channel becoming at each step more complicated, and the shoals thickening around the mariners on every side. The lead was cast rapidly, and the quick eye of the pilot seemed to pierce the darkness with a keenness of vision that exceeded human power. It was apparent to all in the vessel that they were under the guidance of one who understood the navigation thoroughly, and their exertions kept pace with their reviving confidence. Again and again the frigate appeared to be rushing blindly on shoals, where the sea was covered with foam, and where destruction would have been as sudden as it was certain, when the clear voice of the stranger was heard warning them of the danger, and inciting them to their duty. The vessel was implicitly yielded to his government, and during those anxious moments when she was dashing the waters aside, throwing the spray over her enormous yards, each ear would listen eagerly for those sounds that had obtained a command over the crew, that can only be acquired, under such circumstances, by great steadiness and consummate skill. The ship was recovering from the inaction of changing her course, in one of those critical tacks that she had made so often, when the pilot, for the first time, addressed the commander of the frigate, who still continued to superintend the all-important duty of the leadsmar.

"Now is the pinch," he said; "and if the ship behaves well, we are safe; but if otherwise, all we have yet done will be useless."

The veteran seaman whom he addressed left the chains at this portentous notice, and calling to his first lieutenant, required of the stranger an explanation of his warning.

"See you yon light on the southern headland?" returned the pilot; "you may know it from the star near it by its sinking, at times, in the ocean. Now observe the *hom-moc*,* a little north of it, looking like a shadow in the horizon: 'tis a hill far inland. If we keep that light open from the hill, we shall do well; but if not, we surely go to pieces."

"Let us tack again!" exclaimed the lieutenant.

The pilot shook his head as he replied,—

"There is no more tacking or box-hauling to be done to-night. We have barely room to pass out of the shoals on this course; and if we can weather the 'Devil's Grip,' we clear their outermost point; but if not, as I said before, there is but an alternative."

"If we had beaten out the way we entered," exclaimed Griffith, "we should have done well."

"Say, also, if the tide would have let us do so," returned the pilot, calmly. "Gentlemen, we must be prompt; we have but a mile to go, and the ship appears to fly. That top-sail is not enough to keep her up to the wind; we want both jib and main-sail."

"'Tis a perilous thing to loosen canvas in such a tempest," observed the doubtful captain.

"It must be done," returned the collected stranger; "we perish without it. See! the light already touches the edge of the *hom-moc*; the sea casts us to leeward."

"It shall be done," cried Griffith, seizing the trumpet from the hand of the pilot.

The orders of the lieutenant were executed almost as soon as issued, and, everything being ready, the enormous folds of the main-sail were trusted loose to the blast. There was an instant when the result was doubtful, the tremendous threshing of the

* The *hom-moc* is the elevation in the horizon, marking the land.

heavy sails, seeming to bid defiance to all restraint, shaking the ship to her centre; but art and strength prevailed, and gradually the canvas was distended, and, as it filled, was drawn down to its usual place by the power of a hundred men. The vessel yielded to this immense addition of force, and bowed before it like a reed bending to a breeze. But the success of the measure was announced by a joyful cry from the stranger, that seemed to burst from his inmost soul.

"She feels it! she springs her luff! * Observe," he said, "the light opens from the hom-moc already. If she will only bear her canvas we shall go clear."

A report like that of a cannon interrupted his exclamation, and something resembling a white cloud was seen drifting before the wind from the head of the ship, till it was driven into the gloom far to leeward.

"Tis the jib, blown from the bolt-ropes," said the commander of the frigate. "This is no time to spread light duck; but the main-sail may stand it yet."

"The sail would laugh at a tornado," returned the lieutenant; "but that mast springs like a piece of steel."

"Silence, all!" cried the pilot. "Now, gentlemen, we shall soon know our fate. Let her luff; luff you can."

This warning effectually closed all discourse; and the hardy mariners, knowing that they had already done all in the power of man to insure their safety, stood in breathless anxiety awaiting the result. At a short distance ahead of them the whole ocean was white with foam, and the waves, instead of rolling on in regular succession, appeared to be tossing about in mad gambols. A single streak of dark billows, not half a cable's length in width, could be discerned running into this chaos of water; but it was soon lost to the eye, amid the confusion of the disturbed element. Along this narrow path the vessel moved more heavily than before, being brought so near the wind as to keep her sails touching. The pilot silently proceeded to the wheel, and with his

* To *luff* is to turn the ship nearer towards the direction of the wind, or to sail nearer the wind. A ship is said to *spring her luff* when she yields to the helm by sailing nearer the wind.

own hands he undertook the steerage of the ship. No noise proceeded from the frigate to interrupt the horrid tumult of the ocean, and she entered the channel among the breakers with the silence of a desperate calmness. Twenty times, as the foam rolled away to leeward, the crew were on the eve of uttering their joy, as they supposed the vessel past the danger; but breaker after breaker would still rise before them, following each other into the general mass, to check their exultation. Occasionally the fluttering of the sails would be heard; and when the looks of the startled seamen were turned to the wheel, they beheld the stranger grasping its spokes, with his quick eye glancing from the water to the canvas. At length the ship reached a point where she appeared to be rushing directly into the jaws of destruction, when suddenly her course was changed, and her head receded rapidly from the wind. At the same instant the voice of the pilot was heard shouting,—

“Square away the yards!—in main-sail!”

A general burst from the crew echoed, “Square away the yards!” and quick as thought the frigate was seen gliding along the channel before the wind. The eye had hardly time to dwell on the foam, which seemed like clouds driving in the heavens, and directly the gallant vessel issued from her perils, and rose and fell on the heavy waves of the open sea.

COOPER.

DANGERS OF THE DEEP.

’Tis pleasant by the cheerful hearth to hear
Of tempests, and the dangers of the deep,
And pause at times, and feel that we are safe;
Then listen to the perilous tale again,
And, with an eager and suspended soul,
Woo terror to delight us. But to hear
The roaring of the raging elements;
To know all human skill, all human strength,
Avail not; to look around, and only see

The mountain-wave incumbent, with its weight
 Of bursting waters, o'er the reeling bark ;—
 Ah, me! this is indeed a dreadful thing ;
 And he who hath endured the horror once
 Of such an hour, doth never hear the storm
 Howl round his home but he remembers it,
 And thinks upon the suffering mariner.

SCUTHEY

HYMN TO THE NORTH STAR.

THE sad and solemn Night

Has yet her multitude of cheerful fires ;—
 The glorious hosts of light

Walk the dark hemisphere till she retires :
 All through her silent watches, gliding slow,
 Her constellations come, and climb the heavens, and go.

Day, too, hath many a star

To grace his gorgeous reign, as bright as they ;—
 Through the blue fields afar,

Unseen, they follow in his flaming way :
 Many a bright lingerer, as the eve grows dim,
 Tells what a radiant troop arose and set with him.

And thou dost see them rise,

Star of the Pole! and thou dost see them set :
 Alone in thy cold skies,

Thou keep'st thine old, unmoving station yet,
 Nor join'st the dances of that glittering train,
 Nor dipp'st thy virgin orb in the blue western main.

There, at morn's rosy birth,

Thou lookest meekly through the kindling air ;
 And eve, that round the earth

Chases the day, beholds thee watching there ;
 There noontide finds thee, and the hour that calls
 The shapes of Polar flame to scale heaven's azure walls.

Alike beneath thine eye

The deeds of darkness and of light are done ;—

High toward the star-lit sky

Towns blaze—the smoke of battle blots the sun—

The night-storm on a thousand hills is loud—

And the strong wind of day doth mingle sea and cloud.

On thine unaltering blaze

The half-wrecked mariner, his compass lost,

Fixes his steady gaze,

And steers, undoubting, to the friendly coast :

And they who stray in perilous wastes by night,

Are glad when thou dost shine to guide their footsteps right.

And, therefore, bards of old,

Sages, and hermits of the solemn wood,

Did in thy beams behold

A beauteous type of that unchanging good,

That bright, eternal beacon, by whose ray

The voyager of time should shape his heedful way.

BRYANT.

FROM THE NORTH POLE STAR TO THE SUN.

THE North Pole Star, or, as it is called, Polaris, is so far from the Earth, that if we were to set down the distance in miles, the figures would convey no meaning to our minds. A cannon ball would take more than seventeen millions of years to make the journey! But cannon balls, though considered swift messengers in war, creep along as slowly as snails, when placed beside the messengers which the Almighty employs to carry news from one province of his vast empire to the other. Light is one of these swift-footed servants of God. A ball flying through the air at its utmost speed, travels over less than three furlongs in a second ; but a ray of light, issuing from sun or star, sends its flash in that time a distance of

192,000 miles! But even this swift messenger has a long journey to make before reaching our eyes from the far off Pole-star. Winging its way without stopping for an instant, it is thirty-one years on the road. And when it does arrive, it brings the news to our Earth that, thirty-one years before, there was a star shining where we see Polaris; but whether that star be shining still, it cannot say. Other rays, that are arriving every instant, bring later news; but not one reaches our eyes sooner than thirty-one years from the time it set out.

Among other news brought by this swift-footed servant of the King of Heaven is this, also, that the Pole-star is a sun, as big, it may be, and as glorious as our own. And it tells us, further, that between that distant sun and our Earth there is not air like what we breathe, but a something that we call ether, of a thinness and purity unknown to the inhabitants of this world.

If one of these rays of light could be made to reveal all it passed by or through in its journey to our Earth, what a curious chapter should then be written in the history of the heavens! But though it cannot be got to tell the whole story of its journey, there is not much difficulty in imagining a few of the incidents on the road.

On setting out it passes among several dark bodies, called by us planets, to which Polaris is the great source of light and heat, as our Sun is to the Earth and other bodies of the Solar System. They shine by reflecting his light; and they revolve round him as our Earth does round the Sun. The ray brings us no news about these planets, however large or numerous they may be; for their borrowed light is lost in the blaze of the mighty centre of their system. A spectator standing on one of them sees, both by day and night, sights not unlike those that meet the eyes of man. Filling the whole heavens with his sunny beams, Polaris, though but a twinkling star in our heavens, diffuses light and gladness among the planets that own his power. By night, moons, planets, and fixed stars, differently arranged, it may be, from those that we behold, enlighten the dark heavens. Among the fixed stars shining in the skies of that distant province of the Creator's do-

minions is our Sun,—so feeble are his rays after their long journey of thirty-one years toward Polaris.

In five or six hours the ray of light that we imagine to set out from the Pole-star, has passed the region of planets and entered the wide realms of space. For a time Polaris sends a bright and steady blaze behind the messenger. But the size of that receding star gets rapidly less, till what shone with the splendour of a glorious sun at the setting out of the ray becomes, in a day or two, only a bright speck in the dark heavens. The regions through which it then passes are cold, and dark, and silent. Although thousands of heat-giving suns are in sight, their distance is so vast, that Space, as this region has been named, is much more ungenial than the coldest spot on Earth at the severest season of the year. It is also dark as night; and, if there were an ear to listen, not a whisper would be heard to break the solemn silence. But the Almighty has not left these realms untenanted. They are filled with ether, and, at times, a wandering comet may pass slowly through them on its long and dreary journey from one sun to another.

As the ray of light speeds onward, the appearance of things is at times grand or astonishing. The stars, or suns, are not all of the same colour. Some are white; others blue; and some crimson, or green, or yellow. In one part is a patch of stars that looks like a collection of bright and sparkling jewels, green, blue, crimson, and white. Elsewhere are larger patches, that seem made up of innumerable sparkling points, so small that people on Earth call them the star-dust of the heavens. They present most curious appearances, according to the position from which they are viewed; some looking like a flight of birds rushing through the air, others arranged in a ring, and others resembling a spiral or a dumb-bell. In many places suns are passed with companion suns, revolving round each other, a few in five or ten years, while most take several centuries. The colours of these bright bodies are different. Frequently a green sun circles round a crimson, orange, or red; or a white round a yellow; or a blue round a white. If planets, like our dark Earth, revolve round these suns, their skies and clouds

will be brilliant crimson, or pleasant green, or dazzling yellow, or blue and white, like those to which we are accustomed. These planets at one season of their year can have no night. Their light is derived, it may be, from a red sun, which, on setting, is succeeded by the green light of another sun, rising in the opposite quarter of the sky. At other seasons of the year there is night, revealing to the inhabitants of these regions a starry firmament similar to what we behold. But the day is so different from ours, that, instead of one sun in the heavens, there will be two of different colours. And it also not unfrequently happens that sun eclipses sun, to the terror or delight of the inhabitants of these distant worlds, if there be any.

And so this swift messenger speeds onward, year after year, through these vast realms of space. If it had a tongue to speak, its course would be one song of praise, of which the burden would be, "Great and marvellous are thy works, thou King of saints!"

As the ray of light approaches the Earth, speeding along with its enormous swiftness, our Sun grows in brightness, till it shines as the most splendid star in the heavens. All others pale before its beams. On drawing within a day or two's journey of us, this messenger of Heaven encounters the outlying wanderers of the Solar System. In one place it passes a mass of vapour, or water, or, it may be, water cased in a solid shell of ice, thousands of times bigger than our Earth, and moving so sluggishly along as to travel over a foot or two in twenty-four hours. But sluggish though that watery mass may be, it is moving round the distant Sun in an ellipse which it takes one or two thousand years to describe. On drawing still nearer, the ray flashes past many others of these strange bodies, less sluggish, but without the tails or beards that excite our astonishment when they pay a visit to the Earth, and make a figure in our skies as fiery stars or terrible comets. The ray of light may pass twenty, or a hundred, or a thousand comets, of which we never see so much as one. But on approaching nearer, it finds them moving in that cold and far off region, not over a few feet in the hour or day, but at the rate of

mail coaches or railway trains; for the nearer a body gets to the Sun the faster it moves in its orbit.

When the messenger from Polaris arrives within four hours of the journey's end, it flashes past a dark, solid body, which we on Earth call the planet Neptune. It is attended by one, or, perhaps, two moons. The Sun in that region seems no bigger than a large sized pea, and the fixed stars are seen shining by day as well as by night. In an hour and a half the ray reaches another dark ball, attended by six or eight moons, and moving at a speed of four miles in a second. It is the planet Uranus, where the Sun looks larger, and the fixed stars may be also seen by day. An hour and a quarter further on the messenger from Polaris reaches a third dark ball, surrounded by many rings and moons, all lighted up by the now stronger and larger Sun. It is the planet Saturn, whose slow motion and dark colour have made it be looked on by all generations with suspicion and hatred, as the abode of an evil being. No fewer than seven moons and at least three solid rings are constantly wheeling round it, causing eclipses at one time to its surface, and being eclipsed themselves at another. In about thirty-nine minutes more the swift messenger of God has flown across the vast space between Saturn and the next solid ball of our system, the planet Jupiter. That beautiful body is fourteen hundred times bigger than our Earth, and has four moons in attendance on it as it journeys round the Sun. Though without power to check the flight of this messenger of Heaven, it is able to delay comets, when they approach too near, for a month or two on their journey, or to turn them into another path from the one they are travelling. So swiftly does it turn round on itself, that its day is not half the length of ours, notwithstanding its vast size. Its year is almost twelve times as long as ours. In twenty minutes more the ray of light from Polaris enters a curious region of the heavens, of which the history is not well known. It is called the Belt of Asteroids, or little stars. Instead of one dark body, there are at least seventy; and it is not unlikely that there are thousands, or millions, all close together, and all circling round the Sun. The biggest is not larger than the island of Madagascar; most of them

are not so big as a good sized Highland estate; the smallest may be a stone that one could take in his hand. They are not all round like our Earth; nor have they all got atmospheres. Some are cornered, others not. But on the biggest of them a man making a leap would rise fifty feet in the air, and then fall to the ground without doing himself harm. Walking, instead of being a pleasure, would be a pain to beings constituted like us. Every step would lift a man high above ground, unless he were most careful not to exert his muscles more than was absolutely needed. If there are living beings on these little planets, they must be somewhat different from men.

The masses of water that the ray of light passed, on its approach to our system, sometimes assume a most splendid appearance in this region. They are drawn out into what seem clouds of immense length and amazing thinness. One end is nearing the Sun, while the other is lost among these little stars. In other words, it will take the ray of light from Polaris more than a quarter of an hour to rush with its enormous swiftness from one end of the cloud to the other. But the breadth and thickness are very small in comparison with the length; and the cloud is so thin that the faintest stars are distinctly seen through it. These strange bodies were anciently called bearded stars or comets: they are now known only as comets, from the long tail they sometimes throw out behind them on their journey.

In ten minutes after passing the boundaries of this region the ray from Polaris reaches the little dark ball known on Earth as the planet Mars. It is smaller than the Earth, and, like it, has summers and winters, sunshine and rain or snow. Its colour is fiery red, either from the reddish rocks that send back to us the Sun's rays, or from immense fields and forests of red plants. So fierce did the aspect of this planet seem to the ancient heathen, that they gave it the name of Mars, after the god of war and bloodshed. In five minutes more the swift messenger rushes over the distance between Mars and the little ball that is the dwelling-place and the grave of man, and which we call the Earth. So closely nestled is it under the wings of the protecting Sun, that, though distant more

than ninety millions of miles from that luminary, it may not be seen from Jupiter, and is certainly altogether unknown to Saturn and the planets beyond. A further flight for two minutes and a half brings the ray that proceeded from Polaris to a dark body called Venus, that is nearer the Sun than our Earth. We see it at times before sunrise as the morning star, and then after sunset as the evening star, shining as the brightest body in our heavens on moonless nights. So splendid is the light that it showers down on us, that the ancients counted it the star of hope and good fortune. In other two minutes and a half the messenger has reached the last visible planet of our system, Mercury; so named by the ancients after the god of thieves, because they never saw him except a little before sunrise and after sunset. He may sometimes be seen shining in clear nights a little above the place where the Sun has set; and occasionally an ardent star-gazer may detect both him and Venus looking out through the twilight shortly after sunset.

Whether the ray from Polaris passes any other planets or curious objects during its three minutes' flight from Mercury to the Sun, is at present not fully known. There may be planets nearer the Sun than Mercury, though they are invisible to us, just as the inhabitants of Jupiter may know nothing about Mercury and Venus, if, indeed, they ever see our Earth and moon.

THE NORTH POLE.

THERE are only two points on the earth's surface which do not turn round once every twenty-four hours. These points are the ends of the axis. One of them is called the North Pole, and the other the South Pole. There is nothing whatever to mark out the latter to ordinary observation; but the former may be discovered by means of the Pole-star, which is there right overhead. When a traveller comes to that spot on the earth's surface where this well-known star shines exactly above him, or is in his zenith, as it is called, he knows that he is at or near the North Pole. But this test will, in course of ages, no longer hold; for what is now the

Pole-star will have moved from that central place, and another star of greater brightness will have become the guide of wanderers on land and sea.

It is perfectly certain that man has never reached the South Pole; for it is far removed from his habitations, and is guarded by impassable barriers of ice, which stretch, even in summer, to a distance of eight hundred miles on all sides. But it is doubtful whether the North Pole be equally unapproachable. The sailors of civilized nations have several times been within six hundred miles of it; and the wandering tribes of Esquimaux, who dwell on the northern shores of America, may have travelled further north, if, indeed, they have not reached the Pole itself.

The sights that one would see at the North Pole, if it ever were his fortune to get there, are very curious. If we suppose him to arrive about the middle of October, he would find neither sunrise nor sunset. The sun itself would not be seen; but, instead, there would be a brightness, like that which we call twilight, resting on the earth, and shooting up into the heavens. The reason is, that the sun, though below the horizon, would light up a large tract of air above the place where it was. That bright patch travels round the sky. It does not go across it from east to west, as the twilight does in our country, but it moves in a circle round the horizon. One part of the sky may thus be lighted up with day-light, while stars are shining in the other parts, as we ourselves often see the stars peeping out in the east before the last gleams of day have faded in the west. As October wears on, this patch of brightness shoots to a less and less height in the heavens, until only the merest glimmer of day travels round the horizon. By the end of November the Pole is in total darkness, except what light is sent to it from the stars. The aspect of the sky is then singularly gloomy; for the small amount of vapour in the air gives it a blackness unknown in our moist countries, and the stars sparkle like diamonds against the coal-like heavens.

But the moon makes up, in some measure, for this want of sunlight. In four or five days after new moon, a glimmer on the

horizon shows where to look for her rising. That brightness, like the other, travels round the horizon once in twenty-four hours. Gradually it grows in size, until the moon herself at last appears, half or somewhat less, but never crescent as in our country. She continues to shine, without ever setting, for fourteen or fifteen days, as we would reckon. During one-half of that time she mounts higher and higher in the heavens, until she has climbed one-third of the distance from the horizon to the Pole-star. She then begins to return, descending as regularly, and at last disappearing as half-moon, or, at least, without ever becoming a crescent. The only phases the moon has at the Pole are thus half, gibbous, full, gibbous and half. While visible, she does not cross the sky from east to west, but travels round it in that direction once every twenty-four hours. After an absence of thirteen or fourteen days, the moon again visits the polar regions, going through the same changes from her rising to her setting.

While these changes are taking place in the sky, the cold is so great as to cover the earth with a coat of snow that lies from the middle of September to the end of July. The frost is most severe. Rivers and lakes of considerable depth are frozen into lumps of ice, or are covered with sheets of it, ten or twenty feet thick. Ocean himself acknowledges the power of this giant. Far and wide — he bows his neck to the yoke, and a solid floor of ice, many feet in thickness, shows the heaving waters converted into rock. Sometimes the strife between the conquered and the conqueror is grand or awful; for Ocean often rises in rebellion against the tyrant. When a storm, blowing in some distant place, raises waves that are driven underneath the ice, or when tides force their way hither and thither, the floor of ice is split into millions of fragments, that rub, and grate, and crash with appalling noises. The covering of snow that lies on the ground is not without use in these dreary regions. Though excessively cold on the surface, it keeps in comparative warmth whatever is underneath. Mosses and plants are thus preserved in perfect freshness during nine months of the year: and when the hares, or deer, or musk-oxen, that wander over the dreary lands around the Pole, come to

places where these fresh vegetables are preserved, instinct tells them that, by scraping away the snow with their feet, food will be got beneath. Or should a hunter, as sometimes happens in regions six or seven hundred miles further south, bring down one of these creatures, which the snow then falling covers up before he can reach it, he may find the game, eight or nine months after, as fresh as when it was shot.

There is nothing in the appearance of the earth at the Pole that tells man where he is. Land and ocean, mountain and plain, are the same there as elsewhere. He does not see the earth turning on its axis; his head does not get giddy as it whirls round once in twenty-four hours. And the reason is plain—he is himself turning round with it; and this turning goes on so slowly, that, at the distance of a mile from the Pole, a man would be carried over only about twenty-five feet in a minute, or not over one-tenth of the space he can easily walk in that time. At nineteen miles' distance from the Pole, a rod, planted upright in the ground, travels with the earth from west to east over less than five miles an hour. If, then, a man walk westward at the same rate, the earth will slip away underneath him. It will go as fast to the east as he goes to the west; so that by continuing his walk for twenty-four hours, he will at last meet the rod from which he parted at the beginning of his journey;—that is, he will have gone completely round the earth.——

In the beginning of February, a glimmer moving round the horizon proclaims the approach of the sun. In those who have spent three or four months amid the darkness of a polar winter, the cheering sight of his returning beams awakens the most joyful feelings. Day after day the light grows clearer, and the brightness shoots higher up in the heavens. After the middle of March the upper edge of the sun touches the horizon. So slowly does he mount upward, that he travels twice round the heavens before the whole orb comes into view. But though the sun has thus arisen, and a day of six months' uninterrupted sunshine fairly commenced, cold and frost reign supreme. If a person could rise high enough above the Pole, he would see the land covered with snow for more than three thousand miles on all sides. Here

and there the eye would be caught, amid the brilliant white, by a thin black strip, such as our island or the district of British Columbia might present at the distance. The colour of the sea would be a dazzling white for more than fifteen hundred miles from the Pole, in consequence of the vast fields of ice that cover its surface. As the sun mounts higher, the snowy mantle of the earth and the icy covering of the sea slowly creep northwards. For a time there is a battle at the border line between the returning heat and the still powerful cold. Now one is victor, now the other. But the balance leans to the side of the former; and slowly, but surely, the white mantle of snow and ice is driven back toward the Pole.

In three months the sun has risen so far, that he is then twice as high in the heavens as he is with us at noonday in mid-winter. His rays, though showered down without intermission, have, therefore, little effect on the ground.* In two months more, or about the middle of August, the land is entirely free from snow, except on the high grounds; but the sea is thickly covered with fields of ice. Could one then be lifted high enough to see the regions that six months before were entirely clothed in white, what a change would meet his eye! Vast expanses of golden yellow or brilliant green might be perceived stretching far and near. Rolling rivers, winding through grassy plains or among tree-clad hills—blue lakes and heaving oceans, proclaim, though but for a month or two, the defeat of cold and frost. In six weeks more the sun is touching the horizon; snow is falling, not on the uplands only, but also on the plains; and ice is forming everywhere in the regions round the Pole. In the last week of September the sun has again sunk below the horizon. His sojourn of six months in the skies of these polar regions has then come to an end. But he continues to send light for about nine weeks after, thus shortening their dreary night by fully more than two months, and lengthening their day by as much. A night of four

* So strong are they, that, beating without intermission and at right angles on the side of a ship, they have been known to melt the pitch on its timbers; and yet so weak are they, that, on the other side of the ship, and of course in the shade, the cold was scarcely bearable.

months and a day of eight may be said to be the alternations of light and darkness known at the Pole, while the seasons are divided into a winter of eleven months, and a summer of one.

When the sun rises in our country, the shadows he casts are very long, and stretch toward the west. They get shorter as he mounts up in the heavens, and their direction changes from west to north. At noon, when they are shortest, they point due north. Between noon and sunset they increase in size, and then turn toward the east. The changes in shadows cast by the sun in our country are thus twofold. They move round from the west, by the north, to the east, between sunrise and sunset. They are shortest at noon, and longest when the sun is rising or setting. On the contrary, shadows at the Pole turn completely round once every twenty-four hours. They point south as well as north, a thing never seen in this country. They are also of the same size during the whole twenty-four hours. But, for an obvious reason, they are longer in March and September than in June.

Although the sun is visible for more than six months at the Pole, it does not follow that he is then nearer it than during winter. On the contrary, he is actually three millions of miles further off. And from this results a very curious fact. The nearer the earth is to the sun, the faster it travels in its orbit. Now, since the earth attains its least distance at the north polar midnight, it is then wheeling at its utmost speed round the sun. At polar noon, again, it is moving at its slowest rate of motion. Hence the earth takes 186 days to perform the summer half of its journey, and only 179 for the winter half. In other words, the sun remains visible for 186 days, or, more correctly, 190 days, at the North Pole; and is below the horizon for 175. The time of total want of sunlight is only about 70 days, for the twilight is more or less strong during the remaining 105 days that he is absent from the heavens.

The only stars that rise and set at the Pole are the planets of the solar system. And their risings and settings, like those of the sun and moon, are not for a few hours, but for months or years at a time. The fixed stars, on the other hand, never rise or set. Once in twenty-four hours they describe circles in the heavens,

of which the Pole-star is the centre. Those near the horizon move in large circles; those higher up, in smaller ones. The Pole-star itself, though not immovable, describes so small a circle that our eyes cannot detect its motion.

The explanation of these curious sights is simple enough. Every point on the earth's surface is describing a circle round the Pole. If, therefore, one were to stand at that centre, he would see everything on the earth moving round him. But the Pole is a point so small, that, if a traveller covered it with his foot, he would, in the course of a day, make a complete revolution round himself. He is quite unconscious that he is turning round, for the same reason that a person, carried rapidly along in a railway carriage, is frequently deceived into the belief that he is at rest and the landscape in motion. Hence the stars, which are really at rest, seem to be moving; and the earth's surface, which, with men and air and everything on it, is actually turning round the Pole, seems to be at rest. But while the earth is thus turning on its axis once in every twenty-four hours, it is also wheeling round the sun once in a year. And the axis is so placed that during our winter the north end lies away from the sun, while during summer it lies toward him. To understand this, place a lighted lamp on a line with the wooden circle that forms the rational horizon of a globe, and at some distance from it. Tilt the globe up, till the North Pole is 67 degrees distant from the side of the horizon on which you have placed the lamp, and you have the relative positions of the sun and poles at our mid-summer. Remove the lamp to the other side of the globe, still keeping it in a line with the rational horizon. The North Pole then lies away from it, or is in shade; and the South Pole, which was formerly in shade, now lies toward the lamp. You have then the relative positions of the sun and poles at our mid-winter. It is, therefore, this lying from or lying toward the sun that, combined with the turning of the earth on its axis, causes the changes described above. At midsummer, the North Pole is 3,000 miles nearer the sun than the South Pole, and at midwinter 3,000 miles further away; but these slight variations of distance have no effect whatever on polar day and night.

THE ICE WORLD.

FAR in the North, what spectacle unknown
Allures the eye to gaze on it alone?
Amidst black rocks, that lift on either hand
Their countless peaks, and mark receding land;
Amidst a tortuous labyrinth of seas,
That shine around the Arctic Cyclades;
Amidst a coast of dreariest continent,
In many a shapeless promontory rent;
O'er rocks, seas, islands, promontories spread,
The Ice-Blink rears its undulated head;
On which the sun, beyond th' horizon shrined,
Hath left his richest garniture behind:
Piled on a hundred arches, ridge by ridge,
O'er fixed and fluid strides the Alpine bridge,
Whose blocks of sapphire seem to mortal eye
Hewn from cerulean quarries of the sky;
With glacier-battlements that crowd the spheres,
The slow creation of six thousand years,
Amidst immensity it towers sublime,—
Winter's eternal palace, built by Time.
All human structures by his touch are borne
Down to the dust; mountains themselves are worn
With his light footstep: *here* for ever grows,
Amid the region of unmelting snows,
A monument; where every flake that falls
Gives adamantine firmness to the walls.
The sun beholds no mirror, in his race,
That shows a brighter image of his face;
The stars, in their nocturnal vigils, rest
Like signal fires on its illumined crest;
The gliding moon around the ramparts wheels,
And all its magic lights and shades reveals;
Beneath, the tide with idle fury raves
To undermine it through a thousand caves;

Rent from its roof though thundering fragments off
Plunge to the gulf, immovable aloft,
From age to age, in air, o'er sea, on land,
Its turrets heighten and its piers expand.

MONTGOMERY.

THE AURORA BOREALIS.

MIDNIGHT hath told his hour : the moon, yet young,
Hangs in the argent west her bow unstrung ;
Larger and fairer, as her lustre fades,
Sparkle the stars amidst the deep'ning shades :
Jewels more rich than night's regalia gem
The distant Ice-Blink's spangled diadem ;
Like a new morn from orient darkness, there
Phosphoric splendours kindle in mid air,
As though from heaven's self-op'ning portals came
Legions of spirits in an orb of flame,—
Flame that from every point an arrow sends,
Far as the concave firmament extends :
Spun with the tissue of a million lines,
Glist'ning like gossamer the welkin shines :
The constellations in their pride look pale
Through the quick trembling brilliance of that veil :
Then suddenly converged, the meteors rush
O'er the wide south ; one deep vermilion blush
O'erspreads Orion glaring on the flood,
And rabid Sirius foams through fire and blood ;
Again the circuit of the pole they range,
Motion and figure every moment change,
Through all the colours of the rainbow run,
Or blaze like wrecks of a dissolving sun ;
Wide ether burns with glory, conflict, flight,
And the glad ocean dances in the light.

MONTGOMERY.

THE FIRST ENGLISH VOYAGE TO THE ARCTIC SEAS.

IN the month of May 1553, three vessels lay at anchor at Greenwich, ready to set sail on a voyage of discovery to the Northern Seas. So great was the interest excited in the expedition, that the Court, and as it were the nation, assembled to witness its departure. The young king himself (Edward VI.) was confined by illness, but the principal courtiers stood at the palace windows, the rest of the household mounted the towers, while the people lined the shore. The ships fired their guns, and the hardy seamen rent the air with their cheers, as the vessels dropped down the river.

The thought of the distant and unknown seas to which they were bound was either forgotten in the moment of exultation, or served but to heighten the enthusiasm.

The vessels, after stopping a few days at Blackwall, sailed down to Gravesend, and thence to the coast of Essex, where contrary winds, unfortunately, detained them for several days. Then, with a favouring gale, they quitted England and shaped their course for the open expanse of the German Sea. The sailors fixed their eyes on their native land as it gradually receded; and many, unaccustomed to distant voyages, grew sad at the thought that they were looking at it perhaps for the last time.

This was the first English expedition that ever sailed to the Arctic Seas. It was fitted out by the merchants of London, and placed under the command of Sir Hugh Willoughby. Its object was to discover a passage by the North to the golden realms of the East.

By the middle of July the expedition had reached the North Cape in Norway, and saw before them the abyss of the Arctic Ocean stretching toward the Pole. Soon afterwards, amid the thick mists of a stormy night, one of the principal ships, commanded by Richard Chancellor, separated from the others, and never rejoined them. Willoughby's ship, however, and the remaining vessel, named the *Confidence*, continued the voyage.

The imperfect maps of those days seem not to have shown the true line of coast, and Willoughby was astonished at not discover-

ing any appearance of a shore. Instead of finding, as he had expected, a continuation of the coasts of Norway, he was plunging deeper and deeper into the Northern Ocean. As he groped his way through these vast and stormy seas, land at length appeared, but it was high, desolate, and covered with snow, while no sound was wafted to him over the waves except the crash of its falling ice, and the hungry roar of its monsters. This was the coast of Nova Zembla; but he found no point at which a landing could be effected.

Turning to the south-west, the expedition at last came in sight of Russian Lapland; and then sailing westward they reached a point where they resolved to spend the winter.

The coast was naked and uninhabited, but yet, as the rigours of the northern winter had already set in, they determined to take up their quarters in the haven they had reached, till the ensuing spring. They were surprised by the appearance of rein-deer, foxes, Polar bears, and "divers beasts to them unknown, and therefore wonderful."

The narrative here closes, and the darkest gloom involves the fate of this first English expedition, for neither the commander nor any of his brave companions ever returned to their native land. After long suspense and anxiety, tidings at last reached home that some Russian sailors, while wandering along those dreary tracts, had been astonished by the view of two large ships, which they entered, and found the gallant crews all lifeless. There was found on board the journal of the voyage, with a note written in January, showing that at that date they were still alive. What was the immediate cause of a catastrophe so dismal and so complete,—whether it was the extremity of cold, of famine, or of disease, or whether all these ills had united at once to assail them,—can now only be a matter of conjecture. Thomson thus pathetically laments their fate:—

"Miserable they,
Who, here entangled in the gathering ice,
Take their last look of the descending sun;
While full of death, and fierce with tenfold frost,
The long long night, incumbent o'er their heads,
Falls horrible. Such was the Briton's fate,
As with first prow (what have not Britons dared!)
He for the passage sought, attempted since
So long in vain "

THE FROZEN SHIP.

ONE quiet evening, in the middle of August 1775, Captain Warrens, the master of a Greenland whaler, found himself becalmed among a vast number of icebergs in the Arctic Sea. They were of immense height, and closely wedged together; and a succession of snow-covered peaks appeared behind each other as far as the eye could reach. There being no wind, he could make no progress either one way or other, though he was safe so long as the icebergs stood firm.

About midnight the wind rose to a gale, accompanied by a blinding shower of snow; while a succession of thundering, grinding, and crashing noises, gave fearful proof that the ice was in motion.

After a terrible night, Captain Warrens found, to his great joy, that the icebergs had been separated by the storm; and a canal of open water seemed to wind its way through them as far as the eye could reach.

Two miles beyond this channel, a ship made its appearance about noon. The sun was shining brightly, and a gentle breeze blew from the north. At first, some icebergs between prevented Captain Warrens from seeing anything but her masts; but he was struck by the strange way in which her sails were disposed, and with the dismantled look of her yards and rigging. She seemed to be drifted a little way by the wind, and then to remain motionless.

Captain Warrens' curiosity was so excited that he ordered out one of his boats, and with several seamen he rowed toward her.

On approaching, he observed that her hull was miserably weather-beaten, and that not a human being appeared on the snow-covered deck. He hailed her crew, but no answer was returned.

Before going on board, an open port-hole near the main chains caught his eye; and, on looking in, he saw a man leaning back in a chair, with writing materials before him; but the feebleness of

the light within the vessel made everything very indistinct. The party then went on deck, removed the hatchway, which was closed, and went down into the cabin. They first came to the little room which Captain Warrens had looked into through the port-hole. A shudder seized him as he entered it. The man he had seen sat motionless, cold, and silent. He was found to be a corpse, and a green damp covered his cheeks and forehead and veiled his eye-balls. He had a pen in his hand, and a log-book lay before him. The last words in the unfinished page were these:—

"November 11, 1762.—We have now been enclosed in the ice seventeen days. The fire went out yesterday, and our master has been trying ever since to kindle it again, without success. His wife died this morning. There is no relief."

Captain Warrens and his men hurried from the spot without uttering a word. On entering the principal cabin, the first thing they saw was the dead body of a woman, lying in an attitude of deep interest and attention, as if still watching what was going on. Her face had still the freshness of life, and her stiff limbs alone showed that she was dead. Seated on the floor was the body of a young man, holding a steel in one hand and a flint in the other, as if trying to strike fire upon some tinder which lay beside him. In the fore part of the vessel, several sailors were found dead in their berths; and the body of a boy was found crouched at the foot of the gangway stairs.

Neither provisions nor fuel could be discovered anywhere; but Captain Warrens was prevented, by the foolish fears of his men, from examining the vessel so minutely as he wished to do. He therefore carried away the unfinished log-book, and, returning to his own ship, immediately steered to the southward, deeply impressed by what he had seen.

On returning to England, he was enabled, by the book and other writings he had taken from the lost ship, to trace out her name and history.

For twelve long years, through sunshine and storm, had that ill-fated bark navigated the Polar Seas, and, perhaps, unconsciously

solving the problem that had so long baffled human skill and daring, had even crossed the Pole itself!

Such a scene as this is thus described in Coleridge's poem of "The Ancient Mariner:" —

And now there came both mist and snow,
And it grew wondrous cold;
And ice mast high came floating by,
As green as emerald.

And through the drifts the snowy clifts
Did send a dismal sheen;
Nor shapes of men, nor beasts we ken;
The ice was all between.

The ice was here, the ice was there,
The ice was all around;
It cracked and growled, and roared and howled,
Like noises in a swound.

I closed my lips, and kept them close,
And the balls like pulses beat;
For the sky and sea, and the sea and sky,
Lay like a load on my weary eye,
And the dead were at my feet.

All stood together on the deck,
For a charnel dungeon fitter;
All fixed on me their stony eyes,
That in the moon did glitter.

The cold sweat melted from their limbs,
Nor rot nor reck did they:
The look with which they looked on me
Hath never passed away.

ICE, GLACIERS, AND ICEBERGS.

ICE, like snow, is crystallized water; and as snow is a covering to the earth, so ice forms a covering to the water beneath it, and protects it from the influence of the cold.

It is a general law that bodies expand by heat and contract by cold; but water, as it becomes converted into ice, exhibits phenomena which are wholly at variance with this.

As the temperature of water is lowered, it continues to contract until it arrives at a certain point, when all further contraction ceases. That point is 39 degrees of the Fahrenheit thermometer. On lowering the temperature still further, instead of contraction, expansion is produced; and in consequence of this, the colder particles of water become lighter, and rise to the surface, where they are converted into ice, and undergo a still further expansion. On the approach of winter, this phenomenon actually takes place on our lakes, ponds, and rivers; and by this beautiful arrangement of nature an icy covering is provided, which prevents the water from being frozen throughout.

If water continued to grow heavier as its temperature diminished, (as is the case with most liquids,) the colder particles at the surface would sink till the whole body of water was reduced to the freezing point. Again, if ice were not lighter than water, it would sink to the bottom, and by the continuance of this operation, rivers and lakes would soon become a solid mass of ice, which the heat of summer would be insufficient to dissolve. The temperate regions of the earth would thus be rendered uninhabitable.

Among all the phenomena of nature, there is, perhaps, no more striking illustration of the wisdom of the Creator, and of the evidence of design, than in this wonderful exception to a great general law.

Glaciers may be compared to the icicles which hang from the eaves of a snow-covered roof. As these icicles owe their origin to the melting of the snow upon the roof, so also the glaciers are caused by the melting of the snow which perpetually covers the mountain-peaks above.

Glaciers are formed in elevated mountain valleys, by the fall of snow, which is increased in amount by immense quantities precipitated from the adjacent mountain-peaks. The mass is subjected to alternate freezing and thawing, until, in the progress of centuries, the valley becomes filled with a body of ice constituting the glacial formation.

The ice of glaciers differs from pond or river ice, being less transparent and more porous. It is not formed in layers, but is a mixture of ice, snow, and water. The lower part of glaciers contains the most pure and solid ice.

Recent observations and experiments have demonstrated that glaciers are in reality *ice-rivers*, moving slowly and almost imperceptibly onward. In Switzerland the average flow is about an inch an hour in the summer season. As, however, the motion varies very much, according to the temperature of the air, in Greenland it must be much slower.

Glaciers, by their enormous onward pressure, break off masses of rock from the sides and bottoms of their valley courses, and carry along everything that is movable; forming large accumulations of earth and stones in front, and along their sides. These accumulations are called *moraines*.

Icebergs are huge masses of fresh-water ice, broken off by the waves from the glaciers in the polar seas. They are of various dimensions, from a few yards to miles in circumference, rising hundreds of feet out of the water. They have the appearance of glittering chalk-cliffs, towering aloft in fantastic shapes, and presenting a most sublime spectacle.

Great numbers of icebergs are annually drifted by marine currents far into the Atlantic Ocean. As they slowly melt in its waves, they cool the water sensibly for forty or fifty miles around, and lower the temperature of the air to such a degree that their approach is plainly perceived long before they come in sight. They are often encountered in such numbers that the sea is covered with them as far as the eye can reach. In the spring, the Arctic icebergs come within the routes of navigation, and occasion the loss of many vessels every year.

"Few sights in nature are more imposing than that of the huge solitary iceberg, as, regardless alike of wind and tide, it steers its course across the face of the deep far away from land. Like one of the Frost-giants of Scandinavian mythology, it issues from the portals of the north armed with great blocks of stone. Proudly it sails on. The waves that dash in foam against its sides shake not the strength of its crystal walls, nor tarnish the sheen of its emerald caves. Sleet and snow, storm and tempest, are its congenial elements. Night falls around, and the stars are reflected tremulously from a thousand peaks, and from the green depths of 'caverns measureless to man.' Dawn again arises, and the slant rays of the rising sun gleam brightly on every projecting crag and pinnacle, as the berg still floats steadily on; yet, as it gains more southern latitudes, what could not be accomplished by the united fury of the waves, is slowly effected by the mildness of the climate. The floating island becomes gradually shrouded in mist, streamlets everywhere trickle down its sides, and great crags ever and anon fall with a sullen plunge into the deep. The mass becoming top-heavy, reels over, exposing to light rocky fragments still firmly imbedded. These, as the ice around them gives way, are dropped one by one into the ocean, until at last the iceberg itself melts away, the mists are dispelled, and sunshine once more rests upon the dimpled face of the deep."—*Geikie*.

Sea water is converted into ice in a somewhat different manner from fresh water. When a freezing wind blows over the surface of the ocean, the motion of the waves prevents solid ice from being at first formed, but the water is congealed into a spongy mass called *sludge*; this has the effect, to some extent, of stilling the waves, and it forms itself into small round plates, of about a foot in diameter, which, according to Captain Lyon's simile, have the appearance of the scales of gigantic fishes. These plates, (called *pancakes* by the sailors,) by adhering together, become a solid surface of ice, which, under the influence of the frost, extends in every direction, until at length a *field* of ice is formed which sometimes occupies an area of several hundred square miles, increasing in thickness as the winter advances.

During the winter, of about nine months, all navigation is of course suspended in these frozen regions. The warmth of the summer's sun, however, gradually softens the icy floor, and the first strong wind, causing a swell in the ocean, detaches the fields of ice from the shores; and, being once set afloat, they are broken by the violence of the winds and currents into small fields, called *floes*, the extent of which can be distinguished from the mast-head of a ship. When the field is broken into pieces not exceeding forty or fifty yards across, the whole is called a *pack*; when the pieces are broad, they form a *patch*; and when long and narrow, a *stream*. When a ship can sail freely through these masses, the ice is said to be *loose*, or *open*, and is called *drift* ice.

The surface of the ice in the Arctic regions is by no means level. The enormous fields and floes, driven about by the violence of winds and currents, sometimes approach in opposite directions, and strike against each other with the force of millions of tons, forcing up large masses of ice ten, twenty, or thirty feet above the common level, and forming what are called *hummocks*. When a ship is placed between these opposing masses it may be crushed like a walnut, or be lifted completely out of the water, and be placed high and dry on the ice.

The presence of fields and other masses of ice is often discovered at a great distance by a glare of light in the horizon, occasioned by a reflection from the surface of the ice against the opposite atmosphere. This appearance, called *ice-blink*, points out to the experienced navigator, twenty or thirty miles beyond the limit of direct vision, the extent and quality of the ice. Should any dark spots or patches occur in it, he knows that they correspond to certain openings of water, and endeavours to make his way in their direction. The presence of open water is also indicated by the vapour which rises from it being condensed by the cold into a visible form resembling smoke; and on this account it is called *frost smoke*.—The ice-blink sometimes produces remarkable effects of refraction on the neighbouring coast, giving it the appearance “of an extensive city, abounding with the ruins of castles, obelisks, churches, and monuments.”

ADVENTURES IN SPITZBERGEN.

In the Arctic Ocean, midway between Lapland and the North Pole, lies the group of islands known by the name of Spitzbergen. They were discovered in 1596, by the Dutch navigator, William Barentz, in the course of an attempt to accomplish a passage to India by the Arctic seas.

At the extreme north of Spitzbergen proper is a cluster of small islands called the Seven Sisters. These islands are the most northern land on the globe yet reached by man. They lie within six hundred miles of the Pole.

The western coasts of Spitzbergen were long the main seat of the whale fishery; and were frequented every year by vessels from England, Holland, and France; till the whales, retreating before their mighty destroyers, sought refuge in the Greenland seas.

Very little is known of the interior of Spitzbergen, but the coasts have often been explored, and present to the eye immense glaciers, and lofty mountains covered with perpetual snow.

In some places there is a narrow belt of low land between the mountains and the coast; but in other places the steep cliffs of the mountain-ridge reach to the shore, and overhang the ocean.

Vegetation is confined to a few plants of stunted growth, which do not rise above three or four inches from the ground. During the brief Arctic summer, these plants spring up, flower, and seed, in a month or six weeks; but produce nothing on which human beings can subsist.

The sea-fowl on the coasts are so abundant that in many places they literally hide the rocks and darken the air.

The larger forms of animal life are foxes, bears, and rein-deer; in pursuit of which, as well as the walrus and the seal abounding along the coasts, the islands are frequently visited by the Norwegians and Russians.

The following is an interesting account of the adventures of some Russian sailors, who were left for six years on these dreary shores:—

A Russian vessel, which had sailed from Archangel for the whale fishery in 1743, being driven by the wind to the eastern side of the island, found itself beset by floating ice, without hope of deliverance. One of the party recollected that a hut had been erected on this coast by some of his countrymen, under the apprehension of being obliged to spend the winter there. He and three others set out to discover the place. With much difficulty they reached the land, leaping from fragment to fragment of moving ice; then, separating and going in different directions, they found the cottage; which, though ruinous, afforded shelter for the night.

Early in the morning they hastened to the shore, to convey to their comrades this happy intelligence. But what must have been their horror, when they saw only a vast open sea, without a vestige of the ship, or even of the numerous icebergs which had been tossing through the waves! A violent gale had dispersed them all, and apparently also destroyed the vessel, which was never heard of more.

These four unfortunate seamen, abandoned in such frightful circumstances, having the long winter to pass without food, or implements to procure any, did not, however, give way to despair. They had a gun, with which they shot twelve deer. Then their ammunition failed; but some pieces of iron were found on the shore, which they contrived to fashion into pikes. At the moment when their stock of venison was nearly exhausted, they found occasion to employ these weapons against a Polar bear by which they were assailed. The animal, being vanquished and killed after a formidable struggle, supplied for the present all their wants. His flesh was food; his skin, clothing; his entrails, duly prepared, furnished the string which alone had been wanting to complete a bow. With that instrument, they were more than a match for the rein-deer and the Arctic fox, with the spoils of which they filled both their pantry and their wardrobe; and thenceforth they avoided, unless in cases of necessity, the encounter of the bear.

Being destitute of cooking utensils, they were obliged to eat their food nearly raw—dried either by suspension in the smoke

during the long winter, or by exposure to the heat of the sun during the short summer. Yet this regular supply of fresh meat, and, above all, the constant exercise to which necessity prompted, enabled them to preserve their health for six long years, during which they looked in vain for deliverance. In this time they killed ten bears, two hundred and fifty rein-deer, and a multitude of foxes. At last one of them died, when the three survivors sunk into despondency, giving up all hopes of relief, and looking forward to the moment when the last of them would become the prey of the bears.

Suddenly, on the 15th August 1749, having descried a vessel at sea, they lighted fires on the heights, hoisted a flag formed of rein-deer skins, and were at length observed and taken on board the ship, which proved to belong to their native country.

ICELAND, MOUNT HECLA, AND THE GEYSERS.

ICELAND is an island somewhat larger than Ireland. It is situated in the Atlantic Ocean, on the confines of the Arctic Circle, amid regions of ice and snow; yet it gives abundant evidence of the volcanic fires which are slumbering beneath its surface.

Dismal tracts of lava, whose gloom is barely relieved by the columns of smoke that are constantly ascending through apertures and fissures in various parts of their surface, traverse the island in almost every direction.

A deep valley, one hundred miles wide, covered with lava, sand, and ashes, and studded with low volcanic cones, stretches across the island from sea to sea. This valley is a tremendous desert, never approached without dread even by the natives—a scene of perpetual conflict between the antagonist powers of fire and frost, without a drop of water or a blade of grass: no living creature is to be seen—not a bird, nor even an insect. The surface is a confused mass of hardened streams of lava, rent by crevices; and rocks piled on rocks, and occasional glaciers, complete the scene of desolation.

At the southern end of this valley, which opens to the sea in a

wide plain, stands the celebrated volcano, Mount Hecla, 5,200 feet high, and covered with perpetual snow.

There are many other volcanoes in the island, but Hecla, from its insulated position, its vicinity to the coast, and its terrific eruptions, is the best known. Twenty-three violent eruptions are recorded as having occurred between the years 1004 and 1766. One of these continued for six years, spreading devastation over a part of the country once the abode of a thriving colony, now covered with lava and ashes. The latest eruption of Mount Hecla was in 1846.

The Skaptar Jokul is another of the volcanoes of Iceland. Its eruption in 1783 is one of the most dreadful on record. Before it broke out, the volcanic fire must have been in fearful commotion under Europe; for a tremendous earthquake occurred that year, and ruined a large district of Calabria; and a submarine volcano at the same time burned for many weeks in the ocean, thirty miles south-west of Iceland. Its fires suddenly ceased, but they burst out with terrific fury from the Skaptar Jokul. The sun was hid for several months by dense masses of vapour, which extended to England and Holland, and clouds of ashes were carried many hundreds of miles to sea. The lava flowed in a stream from twenty to thirty miles broad, which filled the beds of rivers, and poured into the sea, nearly fifty miles from the place of its eruption. Some rivers at a distance from the stream of lava were heated to ebullition; others were dried up; the condensed vapour fell in snow and torrents of rain; the country was laid waste; famine and disease ensued; and in the course of the two succeeding years 1,300 people, and 150,000 sheep and horses, perished. The scene of horror was closed by a dreadful earthquake.

The most favoured portion of this desolate land is on the eastern shore. Here the soil is wonderfully good, and there is more vegetation than in any other part of Iceland. Willows and junipers adorn the valleys, and birch trees, a few feet high, are in one place abundant. The inhabitants are, however, dependent for fuel on the Gulf Stream, which brings drift-wood in great quantities from Mexico and the coasts of America; and some floated down

the rivers of Asia is drifted by currents from the northern shores of Siberia. Hurricanes are frequent and violent in Iceland: and although thunder is seldom heard in high latitudes, Iceland is an exception, for tremendous thunder-storms are not uncommon there, —a circumstance attributed to the volcanic nature of the island, as lightning accompanies volcanic eruptions everywhere.

The climate of Iceland is much less rigorous than that of Greenland, and it would be still milder were not the air chilled by the immense fields of ice from the Polar Sea which beset its shores.

Among the remarkable features of this interesting island are its hot springs, which in some places throw up a column of water to the height of a hundred feet. These springs abound in many parts of the coast, as well as in the interior of the island; and in some cases the waters of the ocean are sensibly heated by their action.

The most celebrated of these hot springs are the Geysers, situated in the north of the island, where, within the space of a few acres, more than fifty of them may be seen.

The Great Geyser rises from a mound of flinty earth, deposited by the water to the height of about 30 feet, and extending about two hundred feet across. On the top of this mound is a basin sixty feet wide and seven feet deep, in the centre of which is the pipe or opening through which the water rises.

Small eruptions of the Geyser take place every two or three hours; but the great eruption occurs only once in about forty hours.

A visit to the Geysers is thus described by Lord Dufferin:—

“As the baggage-horses, with our tents and beds, had not yet arrived, we sat quietly down to coffee, brewed in Geysers’ water; when suddenly it seemed as if beneath our very feet a quantity of cannon were going off under-ground. The whole earth shook. We set off at full speed toward the Great Geyser, expecting to see the grand water explosion. By the time we reached its brim, however, the noise had ceased, and all we could see was a slight trembling movement in the centre.

“Irritated at this false alarm, we determined to revenge ourselves by going and tormenting the Strokr. Strokr, or *the churn*, you must know, is an unfortunate Geyser, with so little command

over his temper and his stomach, that you can get a *rise* out of him whenever you like. All that is necessary is to collect a quantity of sods, and throw them down his funnel. As he has no basin to protect himself from these liberties, you can approach to the very edge of the pipe, about five feet in diameter, and look down at the water which is perpetually boiling at the bottom. In a few minutes the dose of turf you have just administered begins to disagree with him. He works himself up into an awful passion. Tormented by the qualms of sickness, he groans, and hisses, and boils up, and spits at you with malicious vehemence, until at last, with a roar of mingled pain and rage, he throws up into the air a column of water forty feet high, which carries with it all the sods that have been cast in, and scatters them scalded and half digested at your feet. So irritated has the poor thing's stomach become by the discipline it has undergone, that even long after all foreign matter has been thrown off, it goes on retching and sputtering, until at last nature is exhausted, when, sobbing and sighing to itself, it sinks back into the bottom of its den.

"As the Great Geyser explodes only once in forty hours or more, it was, of course, necessary that we should wait his pleasure;—in fact, our movements entirely depended on his. For the next two or three days, therefore, like pilgrims round an ancient shrine, we patiently kept watch; but he scarcely deigned to favour us with the slightest manifestation of his latent energies. Two or three times the cannonading we had heard immediately after our arrival recommenced, and once an eruption to the height of about ten feet occurred; but so brief was its duration, that by the time we were on the spot, although the tent was not eighty yards distant, all was over. At length, after three days' watching in languid expectation of the eruption, our desire was gratified. A cry from the guides made us start to our feet and rush toward the basin. The usual under-ground thunders had already commenced; a violent agitation was disturbing the centre of the pool. Suddenly a dome of water lifted itself to the height of eight or ten feet, then burst and fell; immediately after which, a shining liquid column, or rather a sheaf of columns, wreathed in robes of

vapour, sprang about seventy feet into the air ; and, in a succession of jerking leaps, each higher than the last, flung their silvery crests against the sky. For a few minutes the fountain held its own ; then all at once it appeared to lose its ascending energy. The unstable waters faltered, drooped, fell, 'like a broken purpose,' back upon themselves, and were immediately sucked down into the recesses from which they had sprung."

The Geysers are supposed to be caused by the collection of heated vapours in large cavities of the earth, which at length acquire sufficient force to expel the waters subject to their pressure. The word *Geyser* signifies, in the Icelandic dialect, "fury."

Thus, amidst the wildness and desolation of Icelandic scenery, the simple inhabitants have abundant opportunity of recognising, in these magnificent fountains, and in the awful grandeur of volcanoes and volcanic remains, the constant presence and mighty power of their Creator.

THE ICELANDERS.

THE Icelanders have been noted for the almost unconquerable attachment which they feel to their native island. With all their privations, and exposed as they are to numerous dangers, they live under the practical influence of one of their common proverbs,—"Iceland is the best land on which the sun shines." Their language, dress, and mode of life, have been invariably the same during a period of nine centuries, while those of other nations have been subject to constant change.

Accustomed from their earliest years to hear of the character of their ancestors, and of the asylum which their native island afforded to science when the rest of Europe was immersed in ignorance and barbarism, the Icelanders naturally possess a high degree of national feeling. The early and successful application of the Icelanders to the study of the sciences forms a perfect marvel in the history of literature. At a period when the darkest gloom was spread over Europe, the inhabitants of this comparatively barren island were cultivating with success both poetry and history ;

and the stores of knowledge which they accumulated referred not only to their native country, but to distant lands, and have in recent years supplied valuable information on many important points connected with the history of other nations.

At the present day travellers are struck by the universal diffusion of the general principles of knowledge among the inhabitants. Though there is only one school in Iceland, and that solitary school is exclusively designed for the education of such as are afterwards to fill offices in Church and State, yet it is exceedingly rare to meet with a boy or girl, who has attained the age of nine or ten years, that cannot read and write with ease.

Domestic education is most rigidly attended to; and it is no uncommon thing to hear youths repeat passages from Greek and Latin authors, who have never been further than a few miles from the place where they were born. On many occasions, indeed, the common people among the Icelanders discover an acquaintance with the history and literature of other nations which is perfectly astonishing.

Reykjavik, the capital of Iceland, has a population of 1,200 inhabitants. In one respect it is a singular-looking place. Nearly all the houses are black. They are principally wooden buildings, one story high, and covered with a coat of tar instead of paint. The author of "Rambles in Iceland" thus describes a visit to it:—

"I walked through the lonely streets, and was struck with the appearance of taste and comfort in the modest-looking dwellings. Lace curtains, and frequently crimson ones in addition, and pots of flowers—geraniums, roses, fuchsias, &c.—were in nearly every window. The white-painted sash contrasted strongly with the dark, tar-coloured wood. After hearing a good deal of the poverty of the Icelanders, and their few resources, I am surprised to find the place look so comfortable and pleasant. The merchant usually has his store and house under one roof. The 'cathedral' is a neat, substantial church edifice, built of brick, and surmounted by a steeple. This, with the college, three stories high; the hotel, a two-story building with a square roof running up to a peak; and the governor's house, a long, low, white-washed edifice,

built of lava, are the highest buildings in Reykjavik. Directly behind the town is a small fresh-water lake, about a mile in length. What surprises me most is the luxuriance of the vegetation. Potatoes several feet high and in blossom, and fine-looking turnips, and beds of lettuce, appear in almost all the gardens. In the governor's garden I see a very flourishing-looking tree, trained against the south side of a wall. This is not quite large enough for a main-mast to a man-of-war, but still it might make a tolerable cane,—that is, provided it were straight. It is about five feet high, and is, perhaps, the largest tree in Iceland. The temperature now, in midsummer, is delicious. The people I am highly pleased with, so far as I have seen them. There is an agreeable frankness about them, and a hearty hospitality not to be mistaken.

“I shortly prepared for a journey to the Geysers. They are only seventy miles from the capital; but if the traveller get over that ground in two days he will do well. Roads—except mere bridle paths—or vehicles of any kind, are unknown in Iceland. All travelling is on horseback. Immense numbers of horses are raised in the country, and they are exceedingly cheap. As for travelling on foot, even short journeys, no one ever thinks of it. The roads are so bad for walking, and generally so good for riding, that shoe-leather, to say nothing of fatigue, would cost nearly as much as horse-flesh. The horses are certainly serviceable, hardy little animals. A stranger in travelling must always have ‘a guide;’ and if he goes equipped for a journey, and wishes to make good speed, he must have six or eight horses; one for himself, another for the guide, and one or two for the baggage, and then as many relay horses. A tent is carried, unless a traveller chooses to take his chance for lodgings. Such a thing as a hotel is not found in Iceland, out of the capital. He must take his provisions with him, as he will be able to get little on his route except milk; sometimes a piece of beef, or a saddle of mutton or venison, and some fresh-water fish. The luggage is carried in packing-trunks that are made for the purpose, and fastened to a rude sort of frame that serves as a pack-saddle.”

GREENLAND.

It is now known that Greenland and other parts of America were visited by the Northmen or sea-kings of Scandinavia in the ninth and tenth centuries.

While Alfred was engaged in expelling the Danes from England, and bestowing the rudiments of civilization on his country, these daring sea rovers of Northern Europe had discovered and were forming settlements in Iceland. They had thus already made more than half the voyage between Europe and America.

A century later Iceland itself was able to send out her colonies; for we read not only of the discovery of Greenland by these hardy and adventurous Northmen, but of their forming settlements on its coasts.

Notwithstanding, therefore, the renown to which Columbus is justly entitled for his subsequent discoveries, the coast of America was really known to European adventurers several centuries before his day.

Greenland is a vast island, at least ten times larger than Britain; but its exact extent is not known, as its northern limit, which lies far within the Arctic Ocean, has never been explored.

The American expedition of 1853, under the command of the celebrated Dr. Kane, reached a point on the western coast of Greenland further north than had previously been attained. It was within six hundred miles of the North Pole. Here they discovered an immense glacier, since named the Humboldt Glacier, which, as described by Dr. Kane, rose like a solid glassy wall, 300 feet above the level of the water! He considers this great glacier to be the northern termination of a vast ice ocean which occupies the interior of nearly the whole of Greenland. "Imagine," says he, "the centre of such a continent—for Greenland is in mass strictly continental—occupied through nearly its whole extent by a deep, unbroken sea of ice, that gathers perennial increase from the water-shed of vast snow-covered mountains, and from all the precipitations of the atmosphere upon its own surface. Imagine this moving onward like a

great glacial river; seeking outlets at every fiord and valley; rolling icy cataracts into the Atlantic and Greenland seas; and, having at last reached the northern limit of the land that had borne it up, pouring out a mighty frozen torrent into unknown Arctic space. . . . Here was a plastic, moving, semi-solid mass, obliterating life, swallowing rocks and islands, and ploughing its way with irresistible force through the crust of an investing sea."

Attempts were made by one of Dr. Kane's sledge parties to climb the glacier; but, though provided with apparatus, they failed in all their efforts to scale the stupendous mass. Another party, pushing northward and keeping parallel to the glacier, at a distance of about six miles from it, came in sight of a vast open sea extending as far as the eye could reach. This sea abounded with seals, bears, and all kinds of Arctic birds. It would thus seem as if the limit of the icy barrier had been reached, and that probably round the Pole itself there exists an open sea in which animal life is abundant.

In this discovery is comprised all that is known of the northern coast of Greenland.

The western coasts are indented by numerous creeks and fiords; in many of which the ground, for two or three months in the year, looks verdant and yields tolerable pasturage.

The eastern coasts can rarely be approached by the whalers, as the vast streams of ice which in summer are constantly driven from the north create a formidable and generally an impassable barrier.

THE GREENLANDERS.

Our first knowledge of the Esquimaux race was obtained from Greenland; for the native inhabitants of Greenland are true Esquimaux. The habits of these people have been made familiar to us by the accounts given to the world by Danish colonists and missionaries, hundreds of years ago; and, in later times, by the Arctic explorers and whale fishers who have visited the frozen regions of the north.

They inhabit a vast territory, extending from Greenland to the shores of the Pacific; and yet the whole Esquimaux race is supposed to number only about 50,000, or not much more than the population of such a town as York. The average stature of the Esquimaux is far below that of European nations. The common height is little more than five feet, and an Esquimaux of six feet would be a giant among his people.

The Esquimaux have no intercourse with other nations, except as they may occasionally be visited; and hence their language and customs are preserved almost free from change.

Uninfluenced by the demands of fashion, the dress of the Esquimaux never alters. Their garments are composed of the skins of the rein-deer, seals, and birds; and great skill is shown in their construction and arrangement. The fine sewing which they perform on skin is done with the bones of birds, instead of needles; and for thread they use the sinews of rein-deer, seals, or whales, split very thin and twisted together double or threefold with their fingers.

The Northern Esquimaux live in snow or ice houses; but the huts in the south of Greenland are made of stone or wood, and covered with brush, turf, and earth. In the summer they live in tents made of skins. It is not uncommon to find several families crowded together in the smallest possible space, where they eat, drink, and sleep, with fish and flesh lying all around, and dogs reposing on every side.

The food of the Esquimaux consists of almost every animal found within their region; but the seal and the walrus are their principal support for nine months of the year. Their improvidence often reduces them to terrible straits. Captain Parry speaks of meeting with some who had no food, and who were devouring the very skins which composed their clothes, to keep them from starvation.

The children are carried about by the mother very carefully on her back, in a fur hood, until they are two or three years of age, and then they take care of themselves, being expected to imitate what they see others do. A boy very early has a bow and arrow put into his hands, that he may practise shooting at a mark. He also

throws stones at some particular object at a little distance, to determine the correctness of his aim. Toward his tenth year, his father provides him with a kayak, that he may initiate him in the arts of rowing, rising, oversetting, and coming up again, fowling, fishing, and all those dexterous feats in which he is himself skilled. In his sixteenth year he is expected to accompany his father in seal-catching; and his first seal is made the occasion of great festivity. The girls, at fourteen years of age, are required to sew, cook, and dress leather; and two or three years later they must learn to row the woman's boat and build houses.

The men make all the fishing and hunting implements, and prepare the wood-work of the boats; and the women cover them with skins. When a seal is conveyed to the shore, the women cut and cook it, and arrange the different parts which are appropriated to clothing, shoes, and other uses, and manufacture them accordingly. In these processes they use only a circular knife, formed of bone or ivory; a sharp bone as a needle; and their teeth, with which they soften and pull the skins into the desired form. The men leave all the proceeds of the hunting and fishing to them; but, on the whole, they have a hard life. While they remain with their parents, they share the fortunes of the family, but from the age of twenty their life is full of precarious toil.

The traffic of the Greenlanders is, of course, limited to a very small number of articles. The stone kettles used in cooking, the arrows and other instruments for fishing and hunting, articles of clothing and the skins from which they are manufactured, form their principal stock-in-trade. In the southern part of Greenland, the drift-wood, unknown in the north, gives them a greater variety of articles; and they often exchange things which are manufactured from it, for whale-bone, whale sinews, or some parts of the whale which are considered delicious food. They not unfrequently load their sledges and boats with various commodities, and start off with their families on a trading expedition. A roving life is so natural to the Esquimaux, that, even if business of this kind did not incite them, they would prefer the change. They often stay away for a year or more; during which time they build a house in

the neighbourhood of some settlement. The land and sea are both open to their use, and they are kindly welcomed by others who may be considered prior settlers, no matter how large may be their number. They rarely cheat, much less rob each other; but they think it fair, and even to the credit of their shrewdness, to cheat or steal from Europeans all they can. The blubber and skins which they sell to them are in exchange for almost any article manufactured from iron or steel. They are ignorant of the value of gold, which they do not prize more than tin or brass; but iron, in any shape, is invaluable to them.

The Esquimaux are not without their festivities. They play ball, sometimes arranging themselves on sides, and testing their skill with much spirit. The children arm themselves for the game with the curved bones of some animal, and play among the snow-drifts with as much frolic as if they had the most attractive sports and commodious play-grounds.

The chief festivity of the Esquimaux is called the Sun Feast, at the winter solstice, to celebrate the re-appearance of the sun, and the renewal of hunting and fishing opportunities. Throughout the country they assemble together in companies, and do their best in the way of entertainment. After eating to fulness, they play and make music. Their only musical instrument is a sort of drum or tambourine, consisting of a stout wooden or whalebone hoop, about thirty inches in diameter, over which, when it is to be used, a wet deer-skin, or the skin of a whale's tongue, is stretched. The Esquimaux takes hold of it with his left hand, and strikes with a stick on the hoop. He stands in the centre of the company, and at every stroke he gives a jump and a whirl, and makes sundry motions with his head and arms. He also sings, in a monotonous tone, a song in honour of seal-catching, and of joy at the return of fair weather.

As the Esquimaux have no general government, no political constitution, but are a mere collection of families, they are governed to a great extent by public sentiment and by general custom. Yet they have a few regulations, which have all the force of law among themselves:—Any one may join them in hunting and fishing.

Whoever finds drift-wood, whether near his own residence or remote from it, has only to place a stone on it, and it is respected as his property. Whoever plunges a javelin into a seal, although it may escape and be killed by another person, has a right to the animal. If two or more kill a creature together, they divide it among them. If several shoot at random at the same time, the one who lodges an arrow nearest the heart can claim the animal, and he bestows a portion of the meat upon the others. These, and many other customs, which spring from their manner of life, control their conduct with great force.

INDUSTRIAL ARTS OF THE ESQUIMAUX.

THE perfection to which the Esquimaux carry such work as they attempt is quite wonderful, when we consider the scarcity of material and the want of emulation, and of any division of labour among them. Their arts are handed down from father to son, and remain with no perceptible change from generation to generation. Their houses are built with mathematical regularity, and are well adapted for securing warmth and protection against the encroachments of the weather. But still greater skill is shown, perhaps, in the construction of their boats,—the kayak, or man's boat, and the oomiak, or woman's boat.

It is acknowledged that the intelligence of the civilised artisan could not produce a result of greater symmetry and finish than the kayak of the Greenlander; and the same vessel which William Baffin described with so much admiration in 1607, is described by Dr. Kane as "beautiful in model, and graceful as the nautilus." With the exception of the hole in the centre, it is perfectly water and air tight, and is propelled by a double-bladed oar, grasped in the middle. The rapidity, ease, and lightness with which it follows the motion of the wave, are wonderful, and the man and his boat seem to be one creature, passing like a sea-bird over its native element.

The kayak, or man's boat, has a canoe-shaped frame-work,

from eighteen to twenty feet in length, tapering to a point at the head and stern, so that it is shaped like a weaver's shuttle. The breadth at the centre is from one foot and a half to two feet, and the depth about one foot. The under surface of the vessel is rounded just enough to allow a person to sit with his feet extended on the bottom; and as each man is his own boat-builder, it is always constructed with a nice adaptation to his particular size and weight. When completed the whole weight of the vessel is not more than sixty pounds, and can be easily carried on the head without the assistance of the hands.

In front of the kayaker lies his line, rolled up on a little raised seat made for it; and behind him rests his seal-skin bladder, an air-tight sack which is always kept inflated and fastened to the sealing-line. This is said to answer the double purpose of a buoy and a break or drag to retard the motion of the prey after it has been struck. The double-bladed oar is about seven feet in length. It is made of solid red deal, if that can be procured, with inlaid bone at the sides. The navigator takes it with both hands in the middle, striking the water on both sides with great rapidity and regularity, as if he were beating time.

As already stated, the speed which the kayakers make in their shell-like vessels is very great. One has been known to go at the rate of from sixty to seventy miles a day. These men become so habituated to the changes of the sea that they glide triumphantly over the roughest billows. If a wave threatens to upset them, they counteract it by their oar, and maintain an upright position; or, if overturned, they swing round and come up again to the surface, as they have taught themselves to do by long practice. It is only when they lose their oar that they are overpowered by the elements, or when the ice or drift-wood drives furiously against them. The kayak is covered with new seal-skin once a year, and is so expeditious and convenient that the Danish authorities of Greenland use this kind of boat as an express for communication between different posts.

The oomiak, or woman's boat, is usually about twenty feet long, five feet broad, and three feet deep. It is sometimes built so as

to accommodate twenty persons. It is made of slender laths, fastened with whalebone, and covered with dressed seal-skin. These boats are generally managed by three or four women together; and in fair weather they row them very rapidly. In any danger, a man with his kayak keeps them in sight, to aid them if required.

The next object of importance to the Esquimaux is the sledge, which finds occupation during at least three-fourths of the year. A native who possesses both a kayak and a sledge is considered a person of property.

To give a particular description of the sledge would be impossible, as there are no two exactly alike, and the materials of which they are composed are as various as their form. The best have their runners made of the jaw-bones of the whale; the upper part consisting of bones, pieces of wood, or deer horns lashed across. The length of a bone sledge is from four to fourteen feet, and the breadth about twenty inches.

The skin of the walrus is also often used in winter, when frozen, to make sledge-runners. And another ingenious contrivance is by putting moss and earth into a seal's skin and pouring a little water into it. The whole soon becomes frozen into one solid piece, and an excellent sledge-runner is thus easily formed. Across both these kinds of runners there is the same arrangement as in the bone sledge. The surface of the runners is coated with ice by pouring water over them mixed with snow; this makes them slide forward with ease, and greatly assists in lightening the load for the dogs.

In the second voyage of Sir John Ross to the Arctic regions, it is related of the steward that he purchased a sledge of the Esquimaux, and, on examining it, found it to be made of salmon, with skins sewed over them; but the cross pieces were the leg bones of the rein-deer. It sometimes happens that when these poor creatures are driven to extremity for food, they break up their sledges, and make a dainty meal of them!

ANIMAL LIFE IN THE ARCTIC REGIONS.

THERE are scarcely any coasts in the world more teeming with animal life than the sterile and ice-bound shores of the Arctic regions. From Greenland westward along the northern coasts of America, countless thousands of bears, seals, walruses, foxes, dogs, and other Arctic mammals, and countless millions of gulls, geese, auks, and other far-flying aquatic birds,—some through the air, and others upon vast fields of ice either fixed or moving,—are continually passing to and fro.

The animals found in these frozen regions have a double interest to the voyager, both because they supply him with nourishing food, and because they interrupt the intense solitude of that vast and silent land. Vegetable life grows more scant and stunted as he advances north, but animal life is larger and more abundant in development, although seen in less variety. The Arctic animals show less beauty of colouring than those of warmer climates; white and different shades of brown principally supplying the place of the more brilliant tints.

There is a wonderful adaptation in creatures to their natural condition. In warm latitudes, the quadrupeds have thin and short hair, but those of the polar regions are supplied with the thickest furs. The aquatic birds, also, are protected by a coat of oily feathers, so that they can plunge securely into the icy waters.

Almost all Arctic animals are beasts and birds of prey; and they derive their sustenance mainly from the sea—the land furnishing very scanty means of supporting life. The ultimate source from which the food of all these animals comes—and which, from its abundance, is the cause of the extreme prolificness of life in all those regions—is derived from the vast number of *medusæ* or jelly-fishes, with which the seas in those latitudes are filled.

There is a very large class of these creatures, known to naturalists by the name of *Acaleptæ*, from a Greek word meaning

nettlés. This name is given to the class from the fact that some of the species have the power of producing a stinging sensation on being touched in the water, or held in the hand. These species are common upon our coasts, and boys often encounter them in bathing. They call them sea-nettlés, sting-galls, and other such names. The whole class of medusæ are called by sailors jelly-fishes, or sea-blubber.

These creatures have a very singular appearance when swimming in the water. The different species are of various forms and of all sizes, but they all seem to consist of a transparent jelly, of a symmetrical and curious form, but without limbs or members. They move through the water by a series of alternate contractions and expansions; by means of which they make a certain degree of progress, though in the main they are drifted to and fro wherever the tides and currents bear them.

The substance of which they are composed, as has already been said, consists of a transparent jelly, but it is sometimes adorned with curious and beautiful tints of colour; and certain lines are seen in some cases ramifying through it, forming a net-work of a very geometrical character, and denoting the complete organization of the mass.

Some of the species have a sort of fringe of hairs, like little snakes, which hang from the margin of the cup-shaped disc that is formed by their bodies, and float writhing and twisting in the water, as the cup, by alternate expansions and contractions, forces its way along. It is from this circumstance that they have received their name of medusæ—medusa having been a fabled monster of ancient times, whose head was adorned with snakes instead of hair.

Many of the medusæ are phosphorescent; and these luminous species are sometimes so numerous that the whole surface of the ocean glows with them at night, as if the waves were undulations of liquid fire.

The different species vary extremely, both in form and in size. Some are so minute as not to be seen by the naked eye; in consequence of which it often happens that curious persons, seeing the

whole surface of the sea glowing with the light which they produce, are surprised to find nothing visible in the water, when they draw up a bucketful of it to the deck of the ship, in order to ascertain the cause.

Others of the medusæ are of great size and strength. They sometimes seize and devour fishes of considerable magnitude; and yet their bodies contain so little substance that when drawn up on the beach they look like a mere mass of jelly. On being exposed for a short time to the sun and air, they almost entirely dry up and disappear, leaving nothing behind them but a thin filmy web.

Animals of this class swarm in countless millions in all the northern seas. So dense are the shoals, sometimes, that the whole colour of the sea, for hundreds of miles, is changed by them. They furnish, of course, immense quantities of food for whales and other cetaceous animals, and also for fishes of all kinds; which in their turn give sustenance to bears, seals, walruses, and multitudes of other animals.

Great God! how manifold, how infinite
Are all thy works! with what a clear foresight
Didst thou create and multiply their birth!
Thy riches fill the far-extended earth;
The ample sea, in whose unfathomed deep
Innumerable sorts of creatures creep;
Bright-scaled fishes in her entrails glide,
And high-built ships upon her bosom ride;
About whose sides the crooked dolphin plays,
And monstrous whales huge spouts of water raise.
All on the land, or in the ocean bred,
On thee depend, in their due season fed;
They gather what thy bounteous hands bestow,
And in the summer of thy favour grow.

THE SEAL.

SEALS are amphibious animals, and are found in almost every quarter of the globe, but are especially abundant in the frozen regions of the north. The Arctic species are very numerous, and are applied by the Esquimaux to a great variety of purposes. They furnish food for his table, oil for his lamp, clothing for his person, while their bones and skins supply materials for the light boats in which he travels across the icy seas.

The common seal is from four to five feet long, and its weight is sometimes above two hundred pounds. Its head is round, and in some positions it has the appearance of a dog. The limbs of the seal are like paddles. The arm and fore-arm of the anterior limbs are very short, so that the paw extends but little from the body. The paw is made of what corresponds to the finger-bones in man, and is covered with a skin which stretches between the fingers, so as to resemble the webbed feet of swimming birds. In giving the backward stroke in swimming the fingers are spread out, but in the forward stroke they are brought together. The hinder limbs are directed backward, so as to look very much like a tail at the end of the tapering body. In swimming, the seal uses the fore paws as paddles; and the hinder ones, with an up and down motion, form both a sculling and steering oar. On land or ice the movements of the seal are very awkward, it being carried forward by the fore paws, while the hinder feet are dragged along. Its body is covered with a glossy fur, closely set to the skin, so as not to interfere with its swimming, which it performs with great celerity. The nostrils and the ears have valves, which the animal can close when it goes under water, where it can, like the whale, remain for some length of time.

The Esquimaux uses various stratagems for taking these creatures, which are by no means easy of capture. They are usually very shy and suspicious, even in places where man has never been seen by them. They have also other enemies, especially the great Polar bear; and the dread of this tyrant of the icy seas

keeps them ever on the alert. Notwithstanding their watchfulness, however, both the bear and man make great havoc among them, and each year hundreds of thousands of them are destroyed.

The bear, in capturing seals, exhibits a cunning excelled only by that of man himself. When this great quadruped perceives a seal basking on the edge of an ice-field, he does not rush directly toward it, for he knows that this would defeat his purpose; for if seen by the seal, the latter would at once sink into the water or swim beyond his reach. To prevent this, the bear makes his approaches under water by diving below the surface, now and then cautiously raising his head to see the true position of his intended victim. At last he gets close in to the edge of the floe, in such a position as to cut off the seal's retreat. A single spring brings him on the ice, and then, before the poor seal has time to flounder to the water, it finds itself locked in the deadly embrace of the bear.

When a seal is thus detected asleep by a native, he approaches it in his kayak, taking care to paddle cautiously and silently till he gets between it and the open water. If he succeed in this, he then easily kills it with a club or a spear. Sometimes, however, the seal goes to sleep on the surface of the open water. Then the approach is made in a similar manner by the kayak, and the animal is struck with a harpoon. But a single blow does not always kill a seal, especially if it be a large one, and the blow has been ill directed. In such cases the animal would undoubtedly make its escape and carry the harpoon along with it; which would be a serious loss to the owner, who does not obtain such a weapon without great difficulty. To prevent this, the Esquimaux attaches a float or buoy to his harpoon by means of a cord; and this so impedes the progress of the seal through the water, that it can neither dive nor swim to any great distance. Wherever the seal may go, the float betrays its track, and the Esquimaux follows in his shuttle-shaped kayak till he can strike again with surer aim.

In winter, when the sea is quite covered with ice, one might fancy that the seal fishery would be at an end, for the seal is

essentially a marine animal. But although it can exist on ice or dry land it cannot *subsist* there. It must have access to the water in order to procure its food, which consists of small fish and mollusca. When the ice becomes, as it often does, a full yard in thickness, extending over hundreds of miles of the sea, how does the seal get to the water? and when in the water, how do the Esquimaux get at the seal? It could not be reached at all, and at such a season the poor natives would undoubtedly starve, were it not for a habit peculiar to this animal, which, happily for them, brings it within their reach.

Though the seal can live for a time under water like a fish, it must now and then come to the surface for fresh air. With this design, while the ice is yet thin it breaks a hole in it, and this hole it keeps carefully open during the entire winter, clearing out each new crust as it forms. No matter to what thickness the ice may attain, this hole always forms a breathing-place for the seal, and a passage by which it may reach the upper surface, and indulge itself in its favourite siesta in the open air. Knowing this habit, the Esquimaux takes advantage of it to make the seal his captive. When the animal is discovered on the ice, the hunter approaches it with the greatest stealth and caution. This is absolutely necessary; for if the enemy is perceived, or makes the slightest noise, the wary seal flounders rapidly into its hole, and is lost. If much frightened, it will not re-appear for a long time, denying itself its open-air exercise until the patience of its persecutor is quite worn out and the coast is again clear.

In making his approaches the hunter uses all his art. In order to conceal himself, he not only takes advantage of every inequality—such as snow-drifts and ice-hillocks—but he also practises an ingenious deception, by dressing himself in the skin of a seal of like species, giving his body the figure of the animal, and imitating its motions, by floundering clumsily over the ice, and oscillating his head from side to side, just as seals are seen to do.

This deception often proves successful, when the hunter under any other shape would in vain endeavour to get within striking distance of his prey. When seals are scarce, and the supply

greatly needed, the Esquimaux often lies patiently for hours together on the edge of a seal-hole waiting for the animal to come up. In order to give it time to get well out upon the ice, the hunter conceals himself behind a heap of snow, which he has collected and piled up for the purpose. A float-stick, ingeniously placed in the water of the breathing-hole, serves as a signal to tell when the seal is mounting through its trap-like passage, the motion of the stick betraying its ascent. The hunter then gets himself into the right attitude to strike, and summons* all his energies for the encounter.

Even during the long dark night of winter this mode of capturing the seal is practised. The hunter, having discovered a breathing-hole—which its dark colour enables him to find—proceeds in the following manner: He scrapes away the snow from around it, and lifting up some water pours it on the ice, so as to make a circle of a darker hue around the orifice. He then makes a sort of cake of pure white snow, and with this covers the hole as with a lid. In the centre of this lid he punches a small opening with the shaft-end of his spear, and then sits down and patiently awaits the issue.

The seal ascends unsuspectingly, as before. The dark water, bubbling up through the small central orifice, betrays its approach, which can be perceived even in the darkest night. The hunter does not wait until it has climbed out upon the ice. Perhaps if he did so, the suspicious creature might detect the device, and dive down again. But it is not allowed time for reflection. Before it can turn its unwieldy body, the heavy spear of the hunter—struck through the yielding snow—descends upon its skull, and kills it in an instant.

THE WALRUS.

THE walrus, or sea-horse, is one of the most characteristic inhabitants of the Arctic regions. Formed for a life among the icy seas, where it is found in large herds, it is protected against the ex-

treme cold by a skin nearly an inch thick, and a coating of oily fat with which its body is completely enveloped.

The most remarkable feature in the walrus consists in two immense teeth, or tusks, which project in a curved line from the upper jaw, and are sometimes two feet long. They are of beautiful white bone, almost equal to ivory. With these tusks the walrus gathers its food, by scraping mussels and other shell-fish from the rocks and out of the sand. They also form powerful weapons of defence against the Polar bear and its other enemies.

"Even when not excited," says Dr. Kane, "he manages his tusks bravely. They are so strong that he uses them to grapple the rocks with, and to climb steep of ice and land which would be inaccessible to him without their aid. He ascends in this way rocky islands that are sixty or a hundred feet above the level of the sea; and I have myself seen him in these elevated positions basking with his young in the cool sunshine of August and September.

"He can strike a fearful blow, but prefers charging with his tusks in a soldierly manner. I do not doubt the old stories of the Spitzbergen fisheries, where the walrus puts to flight the crowds of European boats. The walrus is the lion of the Danish Esquimaux, and they always speak of him with the highest respect.

"I have heard of oomiaks being detained for days at a time at the crossings of straits and passages which he infested. Governor Flaischer told me that, in 1830, a brown walrus,—which, according to the Esquimaux, is the fiercest,—after being lanced and maimed near Uppernavik, routed his numerous assailants, and drove them in fear to seek for help from the settlement. His movements were so violent as to jerk out the harpoons that were stuck into him. The governor slew him with great difficulty, after several rifle-shots and lance-wounds from his whale-boat."

"On one occasion," says Captain Beechey, "some of the crew of the *Trent* having wounded a walrus, took to their boat, when they were assailed by a large herd of these animals. Snorting with rage, they rushed at the boat, and it was with the utmost

difficulty they were prevented from upsetting it or tearing it to pieces. They would place their tusks on the gunwale, or rush at it with their heads. The herd was so numerous, and their attacks so incessant, that there was not time to load a musket. The purser, fortunately, had his gun loaded, and the men being nearly exhausted with chopping and striking at their assailants, he snatched it up, and, thrusting the muzzle into the mouth of a large and formidable walrus, who seemed to be the leader of the herd, he fired. The wound proved mortal, and the animal fell back among his companions, who immediately desisted from the attack, and in a moment quitted the boat, swimming away as hard as they could with their leader, whom they actually bore up with their tusks and preserved from sinking."

The walrus has two great enemies in his icy home—the Esquimaux and the Polar bear. Captain Beechy thus graphically describes the manœuvres of that king of the bruin race, which must often be attended with success. The bears, when hungry, are always on the watch for animals sleeping upon the ice, and they try to come on them unawares: "One sunshiny day a walrus, of nine or ten feet in length, rose in a pool of water not very far from us; and, after looking around, drew his greasy carcass upon the ice, where he rolled about for a time, and at length laid himself down to sleep. A bear, which had probably been observing his movements, crawled carefully upon the ice on the opposite side of the pool, and began to roll about also, but apparently more with design than for amusement, as he gradually lessened the distance that intervened between himself and his victim. The walrus, suspicious of his advances, drew himself up preparatory to a precipitate retreat into the water in case of a nearer acquaintance with his playful but treacherous visitor; on which the bear became instantly motionless, as if in the act of sleep; but after a time he began to lick his paws and clean himself, occasionally encroaching a little more upon his intended prey. But even this artifice did not succeed: the wary walrus was far too cunning to allow himself to be entrapped. He suddenly plunged into the pool; which the bear no

sooner observed than he threw off all disguise, rushed toward the spot, and followed him in an instant into the water; where, I fear, he was as much disappointed of his meal as we were of the pleasure of witnessing a very interesting encounter."

The front part of the head of a young walrus, when seen at a distance, is not unlike the human face; and, as the creature has the habit of raising its head above water to look at ships and other passing objects, this resemblance may have given rise to the old stories of mermaids and mermen in the Northern Seas.

The meat of the walrus is not despised by Europeans, while to the Esquimaux there is no greater treat than a kettle filled with walrus blubber.

A WALRUS HUNT.

[The following description of a walrus hunt is from Dr. Kane's "Arctic Explorations."
It was witnessed by Lieutenant Morton, one of Dr. Kane's party.]

THE party which Morton attended on their walrus hunt had three sledges. One was to be taken to a cache in the neighbourhood; the other two were dragged at a quick run toward the open water, about ten miles off to the south-west. They had but nine dogs to these two sledges, one man only riding, the others running by turns. As they neared the new ice, and where the black wastes of mingled cloud and water betokened the open sea, they would from time to time remove their hoods and listen intently for the animal's voice.

After a while Myouk became convinced, from signs or sounds, or both,—for they were inappreciable by Morton,—that the walruses were waiting for him in a small space of recently-open water that was glazed over with a few days' growth of ice; and, moving gently on, they soon heard the characteristic bellow of a bull awuk. The walrus, like some of the higher order of beings to which he has been compared, is fond of his own music, and will lie for hours listening to himself. His vocalization is something between the mooing of a cow and the deepest baying of a mastiff: very

round and full, with its barks or detached notes repeated rather quickly, from seven to nine times in succession.

The party now formed in single file, following in each other's steps; and, guided by an admirable knowledge of ice-topography, wound behind hummocks and ridges in a serpentine approach toward a group of pond-like discolourations, recently-frozen ice-spots, but surrounded by firmer and older ice.

When within half a mile of these, the line broke, and each man crawled toward a separate pool—Morton on his hands and knees following Myouk. In a few minutes the walrus were in sight. They were five in number, rising at intervals through the ice in a body, and breaking it up with an explosive puff that might have been heard for miles. Two large grim-looking males were conspicuous as the leaders of the group.

Now for the marvel of the craft. When the walrus is above water, the hunter is flat and motionless; as he begins to sink, alert and ready for a spring. The animal's head is hardly below the water-line before every man is in a rapid run; and again, as if by instinct, before the beast returns, all are motionless behind protecting knolls of ice. They seem to know beforehand not only the time he will be absent, but the very spot at which he will reappear. In this way, hiding and advancing by turns, Myouk, with Morton at his heels, has reached a plate of thin ice, hardly strong enough to bear them, at the very brink of the water-pool the walrus are curvetting in.

Myouk, till now phlegmatic, seems to waken with excitement. His coil of walrus-hide, a well-trimmed line of many fathoms' length, is lying at his side. He fixes one end of it in an iron barb, and fastens this loosely by a socket upon a shaft of unicorn's horn; the other end is already looped, or, as sailors would say, "doubled in a bight." It is the work of a moment. He has grasped the harpoon: the water is in motion. Puffing with pent-up respiration, the walrus is within a couple of fathoms close before him. Myouk rises slowly—his right arm thrown back, the left flat at his side. The walrus looks about him, shaking the water from his crest: Myouk throws up his left arm, and the

animal, rising breast-high, fixes one look before he plunges. It has cost him all that curiosity can cost,—the harpoon is buried under his left flipper.

Though the awuk is down in a moment, Myouk is running at desperate speed from the scene of his victory, paying off his coil freely, but clutching the end by its loop. As he runs he seizes a small piece of bone, rudely pointed with iron, and, by a sudden movement, he drives it into the ice: to this he secures his line, pressing it down close to the ice-surface with his feet.

Now comes the struggle. The hole is dashed in mad commotion with the struggles of the wounded animal; the line is drawn tight at one moment, relaxed the next. The hunter has not left his station. There is a crash of the ice; and rearing up through it are two walruses, not many yards from where he stands. One of them, the male, is excited and seemingly terrified; the other, the female, collected and vengeful. Down they go again, after one grim survey of the field; and at that instant Myouk changes his position, carrying his coil with him and fixing it anew.

He has hardly fixed it before the pair have again risen, breaking up an area of ten feet in diameter about the very spot he left. As they sink once more he again changes his place. And so the conflict goes on between address and force, till the victim, half exhausted, receives a second wound, and is played like a trout by the angler's reel.

Some idea may be formed of the ferocity of the walrus, from the fact that the battle which Morton witnessed—not without sharing in its dangers—lasted for four hours; during which the animal rushed continually at the Esquimaux as they approached, tearing off great tables of ice with his tusks, and showing no indication of fear whatever. He received upwards of seventy lance wounds,—Morton counted over sixty; and even then he remained hooked by his tusks to the margin of the ice, either unable or unwilling to retire. His female fought in the same manner, but fled on receiving a lance-wound.

SNOW

WHEN a cold current of air meets with the vapour contained in a warm current of air, it causes that vapour to fall in the form of rain, snow, or hail. The state of the atmosphere determines which of these forms it shall take. Snow is formed by the freezing of watery particles in the lower regions of the atmosphere, which are at first mere icy lines or stars, but collect together, and form flakes, in the course of their descent to the earth. The formation of snow is often carried on before the eyes of the dwellers in Arctic regions. Though they close every crevice in their huts, in order to keep out the cold air, yet the walls are covered with icy particles; and when a stream of air accidentally finds entrance, snowy flakes are precipitated. The same curious sight has been witnessed at St. Petersburg. In a crowded assembly-room in that capital, a gentleman happened to break a pane of glass, and the stream of intensely cold air which entered by that means was sufficient to congeal the vapour in the air of the room, which immediately fell in the form of snow-flakes. The Dutch who wintered in Nova Zembla found that snow-flakes were formed from the vapour of their breath, every time they came in contact with the external air.

The snow that falls in northern latitudes is more like a thick sleet than the large flakes which we see in England. The particles freezing as they descend, assume the form of minute crystals, which, in a strong wind, are carried along in a similar manner to the sand over the African deserts.

Flakes of snow, as seen in temperate climates, are generally irregular in their shape, though often elegant and reflecting with great splendour the rays of the sun. This is also the case in the Arctic regions, when the temperature of the air is near the freezing point, and much snow falls. Sometimes it consists of small grains; sometimes of large, rough, white flakes; at others, the flakes are composed of starry crystals, formed of separate grains. But in severe frosts, although the sky may appear perfectly clear,

flakes of snow, of the most regular and beautiful forms, are always seen floating in the air, and sparkling in the sunbeams; and the snow which falls in general is of the most elegant texture and appearance. Many are the wonders discovered to us by the microscope, both in the animal and vegetable worlds, but it is doubtful whether there is anything among these wonders to surpass in beauty the snow-flakes of the polar regions.

The celebrated Arctic traveller, Scoresby, has described a great number of different crystalline forms, some of which snow exhibits when examined by the microscope. Thus, among others, there are beautiful varieties which resemble stars, wheels, pyramids, complex mathematical figures, rosettes, leaves, spines, feathers, and others equally curious. How strange to think that a few degrees less heat evolve these beauties of form and aspect from a drop of water!

The lightness of snow is occasioned by the extent of its surface very much exceeding the matter it contains. It has been calculated that a flake of snow, taken as nine times more expanded than water, descends three times more slowly. A depth of twenty-seven inches of snow, in melting, does not give more than three inches of water. The whiteness of snow is owing to the minute particles into which it is divided; hence when ice is pounded it is equally white.

• In countries lying within six or seven hundred miles of the poles, the ground is always covered with snow, even when its level is only a few inches above the sea. And, in every part of the world, there is a certain height at which the atmosphere is in a state to form snow, and where, if land occurs, it will be covered with snow all the year round. This is called the *snow-line*, or limit of perpetual snow. Thus, we find that, in temperate and warm countries, the summits of lofty mountains, reaching to this height, are always covered with snow. The snow-line varies exceedingly: near the Equator, it is three miles above the sea-level; in places that are equally distant from the Equator and the Poles, one mile and three quarters; and near the Poles, the snow-line comes down to the surface of the earth.

The uses of snow to the earth are many and most important.

Even on the summits of lofty mountains, where no sign of vegetation appears, but where snow always covers the heights, a most beneficial effect is produced on the surrounding countries, especially on such as are subject to periodical droughts of many months' duration. The partial melting of the mountain-snows, during summer, gives rise to numerous rivers, and keeps up the supply of their waters, to the incalculable benefit of the inhabitants of the regions through which they flow.

At lower elevations, snow has valuable uses to the vegetable world, in protecting it, during the winter season, from the effects of intense frost; for, being a bad conductor of heat, it retains the temperature of the ground at what it was when the snow fell. While the air above the snow may be 38 degrees below zero, the ground below will only be at zero. Hence the fine, healthy green colour of young wheat and young grass, after the snow has melted in spring. In districts where snow remains on the ground all the winter, and only disappears with the approach of spring, this effect is much more obvious than with us: numerous beautiful and somewhat delicate plants flourish as wild flowers among mountains, while with us the winter season is often destructive to them. This is easily accounted for, when we consider that, in their native heights, severe as they are, these plants have a covering, like that of a thick woollen garment, protecting them from frost during the whole winter; while in this climate they are exposed to sudden changes of temperature, being at one time drenched with long-continued rains, and at another, perhaps, exposed to severe frost, before any snow has fallen to shelter them.

"Few," says Dr. Kane, "can realize the protecting value of a warm coverlet of snow. No eider down in the cradle of an infant is tucked in more kindly than the sleeping dress of winter about the feeble flower life of the Arctic regions. The first snows of August and September enshrine the Arctic plants in a non-conducting air-chamber; and as each successive fall increases the thickness of the cover, we have, before the intense cold of winter sets in, a light cellular bed, covered by drift six, eight, or ten feet deep, in which the plant retains its vitality."

SNOW HUTS.

THE snow huts of the Greenlanders have been described by Captain Parry, who, during his second voyage to the Arctic regions, wintered upon a small island called by the Esquimaux, Winter Island. Here he was visited by a friendly party of the Esquimaux, and Captains Parry and Lyon accompanied them to their huts on shore, and were much gratified by the uncommon spectacle of a snow village. "When it is recollected," says Captain Parry, "that these habitations were fully within sight of the ships, and how many eyes were continually on the look-out, among us, for anything that could afford interest or variety in our present situation, our surprise may in some degree be imagined, at finding an establishment of huts, with canoes, sledges, dogs, and above sixty men, women, and children, as regularly, and to all appearance as permanently, fixed, as if they had occupied the spot for the whole winter."

In the construction of these extraordinary houses, not a single material was used but snow and ice. They were formed of oblong blocks of the former substance, six or seven inches thick, and about two feet long, disposed in successive layers in a circular form, each layer resting on its edge, and inclining inward until the sides of the building approached so near as to leave only a small aperture at the top, into which the key-stone (block) was fitted with much nicety. The interior was no less remarkable. After creeping through two continuous passages, each about ten feet long, and from four to five feet in height, and each possessing an arched doorway, our voyagers came to a small circular apartment, which opened by three doorways into as many inhabited apartments, one on each side of, and the other opposite to, the entrance. "The interior of these huts," says Captain Parry, "presented a scene no less novel than interesting. The women were seated on the beds at the sides of the huts, each having her little fire-place or lamp, with all her domestic utensils about her; the children crept behind their mothers; and the dogs, except the female ones, which were indulged with a part of the beds, slunk out past us in dismay."

Captain Franklin thus describes the manner in which these dwellings are built :—" Having selected a spot on the river, where the snow was about two feet deep, and sufficiently compact, one of the Esquimaux commenced the building by tracing out a circle twelve feet in diameter. The snow in the interior of the circle was next divided, with a broad knife having a long handle, into slabs three feet long, six inches thick, and two feet deep, being the thickness of the layer of snow. These slabs were tenacious enough to admit of being moved about without breaking, or even losing the sharpness of their angles ; and they had a slight degree of curvature, corresponding with that of the circle from which they had been cut. They were piled upon each other around the circle, exactly like courses of hewn stone ; and care was taken to smooth the beds of the different courses with the knife, and to cut them so as to give the wall a slight inclination inward ; by which contrivance the building assumed the form of a dome. The dome was closed somewhat suddenly and flatly, by cutting the upper slabs in a wedge form, instead of the more rectangular shape of those below. The roof was about eight feet high, and the last aperture was shut up by a small conical piece. The whole was built from within, and each slab was cut so as to retain its position without requiring support until another was placed beside it, the lightness of the slabs greatly facilitating the operation. When the building was covered in, a little loose snow was thrown over it, to close up every chink, and a low door was cut through the wall with the knife. A bed-place was next formed, and neatly faced up with slabs of snow, which were then covered with a thin layer of pine branches, to prevent them from melting by the heat of the body. At each end of the bed a pillar of snow was erected, to place a lamp upon. And lastly, a porch was built before the door, and a piece of clear ice was placed in an aperture cut in the wall for a window. The purity of the material of which the house was formed, the elegance of its construction, and the clearness of its walls, which transmitted a very pleasant light, gave it an appearance far superior to a marble building."

WHY FAT IS THE BEST FOOD IN COLD REGIONS.

[Animal heat is caused by the union of the *oxygen* of the air with the *carbon* or worn-out particles of our bodies. This carbon, taken in as a part of our food, and being used to form the tissues of the body, is dislodged, particle by particle, whenever we move a muscle, be it of the heart, lungs, or limbs, and whenever we think or feel; and it is then that the union with oxygen—that is, the combustion, takes place. The more intensely, therefore, we think, and act, and feel, the more carbon we burn, and the more repairs our bodies need. The condition of life is, therefore, death; and the faster we live, the more rapidly are the particles of our bodies burning up—passing away. The following humorous article may help to fix some of these principles in our memories.]

We must be plain with our reader. It will not do to mince matters where questions of science are concerned. Dainty people will, no doubt, object to the proposition we are about to advance. Nevertheless we persist, and proceed to lay down the following assertion: We are all living stoves—walking fire-places—furnaces in the flesh.

Now we do not intend to say that any one can light a cigar, or boil an egg, or even ignite a lucifer-match at these human hearths. Still, we repeat, these bodies of ours are stoves—fire-places—furnaces, if these terms can be applied to any apparatus for the express production of caloric. And is not heat produced in the human body by the union of oxygen with carbon, just the same as by the burning of wood in an open fire-place? and does not this union take place in the capillaries of the blood-vessels?

But, granting that our bodies are veritable stoves, the reader will desire to know where we procure our fuel. Fortunately, our coal and fire-wood are stored up in a very interesting form. They are laid before us in the shape of bread and butter, puddings and pies; rashers of bacon for the labourer, and haunches of venison or turtle-soup for the epicure. Instead of being brought up in scuttles, they are presented in tureens, dishes, or tumblers, or all of them, in pleasant succession.

In fact, whenever you send a person an invitation to dinner, you virtually request the honour of his company to take fuel; and when you see him enthusiastically employed on your dainties, you know that he is literally "shovelling" fuel into his corporeal stove. The ultimate form in which this fuel is burnt in the capil-

laries is that of carbon, with a little hydrogen and sulphur ; but we swallow it in the shape of fat, starch, sugar, alcohol, and other less inflammatory compounds. By far the most heating of these substances is fat: ten pounds of this material, imported into your stove, will do as much work—that is, will produce as much warmth—as twenty-five pounds of starch, twenty-five of sugar, or even twenty-six of spirits.

And a pleasant thing it is to observe how sagaciously the instinct of man has fastened upon the articles which will best supply him with the species of fuel he requires. The Esquimaux is extremely partial to oily fare. He does not know why. He never heard of the doctrine of animal heat ; but he feels intuitively that bear's grease and blubber are the things for him. Condemn him to live on potatoes or Indian corn, and the poor fellow would resent the cruelty as much as an alderman of the old school if sentenced to subsist on water-gruel alone.

And the savage would be perfectly right. Exposed as he is to the fierce cold of a northern sky, every object around him plundering him of his caloric incessantly, what he needs is plenty of oily food, because from this he can produce the greatest quantity of heat. On the other hand, the native of the tropics, equally ignorant of animal chemistry, eschews the fiery diet which his climate renders inappropriate, and keeps himself cool on rice, or dates, or watery fruits.

Hence we see the reason why a very stout man, if deprived of food, can keep up his corporeal fires for a longer time than a slender one. Human fat is fuel laid away for use. It constitutes a hoard of combustible material upon which the owner may draw whenever his ordinary supplies are intercepted. Let all plump persons therefore rejoice. We offer them our hearty, perhaps somewhat envious, congratulations. They, at any rate, are prepared to stand a long siege from cold.

For the same reason, animals which hibernate, like the bear, jerboa, marmot, dormouse, bat, and others, generally grow plump before they retire into winter quarters. Upon their capital of fat they subsist during their lethargy, the respiration being lessened,

the pulse reduced to a few beats per minute, and the temperature perhaps nearly to the freezing point. But when the season of torpor terminates, they issue from their caves and burrows meagre and ravenous, having burned up their stock of fuel, Bruin himself appearing to be anxious to defraud the perfumers of the unguent which is so precious in their eyes.

But perhaps the most striking feature in this warmth-producing apparatus within us is the self-regulating power which it possesses. The fires on our domestic hearths decline at one moment, and augment at another. Sometimes the mistress of the house threatens to faint on account of excessive heat; sometimes the master endeavours to improve the temperature by a passionate use of the poker, with an occasional growl respecting the excessive cold.

Were such irregularities to prevail unchecked in our fleshy stoves, we should suffer considerable annoyance. After a meal of very inflammatory materials, or an hour spent in extraordinary exertion, the gush of caloric might throw the system into a state of high fever. How is this prevented? In some of our artificial stoves, little doors or slides are employed to control the admission of air; in furnaces connected with steam-engines we may have dampers, which will accomplish the same purpose by the ingenious workings of the machine itself.

But neither doors nor dampers, pokers nor stokers, can be employed in the bodily apparatus. If, on the one hand, our human fires should begin to flag from undue expenditure of heat, the appetite speaks out sharply and compels the owner to look round for fuel. Hunger rings the bell, and orders up coals in the shape of savoury meats. Or, should the summons be neglected, the garnered fat, as we have seen, is thrown into the grate to keep the furnace in play.

If, on the other hand, the heat of the body should become unreasonably intense, a very cunning process of reduction is adopted. When a substance grows too hot, the simplest method of bringing it into a cooler frame is to sprinkle it with water. This is precisely what occurs in our human frames. For no sooner does our

internal heat rise above its standard height than the perspiration tubes, with their six or seven millions of openings, indignant at the event, begin to pour out the fluid, so as to bathe the surface of the whole body. Whenever, therefore, a man becomes overheated by working, running, rowing, fighting, making furious speeches, or other violent exertions, he invariably resorts to this method of quenching the heat by "pouring on water."

What shall we say, then, good reader? Speaking seriously, and looking at the question from a mere human point of view, could any project appear more hopeless than one for burning fuel in a soft, delicate fabric, like the human body—a fabric composed for the most part of mere fluids—a fabric which might be easily scorched by excess of heat or damaged by excess of cold? Does not it seem strange that a stove should have flesh for its walls, veins for its flues, and skin for its covering? Yet here is an apparatus which, as if by magic, produces a steady stream of heat—not trickling penuriously from its fountains, but flowing on day and night, winter and summer, without a moment's cessation, from January to December.

Carry this splendid machine to the coldest regions on the globe, set it up where the frosts are so crushing that nature seems to be trampled dead,—still it pours out its mysterious supplies with unabated profusion. It is an apparatus, too, which does its work unwatched, and, in a great measure, unaided. The very fuel, which is thrown into it in random heaps, is internally sifted and sorted, so that the true combustible elements are conveyed to their place and applied to their duty with unerring precision.

No hand is needed to trim its fires, to temper its glow, to remove its ashes. Smoke there is none, spark there is none, flame there is none. All is so delicately managed that the fairest skin is neither shrivelled nor blackened by the burning within. Is this apparatus placed in circumstances which rob it too fast of its caloric? Then the appetite becomes clamorous for food, and in satisfying its demands the fleshy stove is silently replenished. Or, are we placed in peril from superabundant warmth? Then the tiny flood-gates of perspiration are flung open, and the surface

is laid under water until the fires within are reduced to their wonted level.

Assailed on the one hand by heat, the body resists the attack, if resistance be possible, until the store of moisture is dissipated; assailed on the other by cold, it keeps the enemy at bay until the hoarded fuel is expended. Thus protected, thus provisioned, let us ask whether these human hearths are not entitled to rank among the standing marvels of creation; for is it not startling to find that, let the climate be mild or rigorous, let the wind blow from the sultry desert or come loaded with polar sleet, let the fluctuations of temperature be as violent as they may without us, there shall still be a calm, unchanging, undying summer within us?

GEORGE WILSON.

In order to understand the production of animal heat, we must recall to recollection what takes place when charcoal is burned in air. When this is going on, the charcoal combining with the oxygen of the air, begins to disappear, and forms a gas called carbonic acid, containing both the charcoal and the oxygen.

Air, in its passage through the body of the animal, is changed in a similar manner. Ordinary air, as we inspire it, contains only about one two-thousandth of its volume of carbonic acid; but the air we breathe out or expire contains one-fiftieth of its volume of carbonic acid.

The air from our fire-places obtains its carbonic acid by the burning of the charcoal of the coals; and the air breathed out by the animal obtains its carbonic acid by the burning of charcoal in the body. The breath thus contains a gas or air, which, however clear, yet contains charcoal, and the quantity of charcoal thus given out by each man is twelve ounces a day, which in a year amounts to upwards of two cwt. A family of ten annually breathe out a ton of coal matter.

Whether charcoal is burned in our grates or in our frames, the total amount of heat produced is the same. It is true that no part of the animal becomes red hot as the coals in our fire-places do, but by diffusing the heat over a lengthened period, it makes up for its comparatively small intensity.

In the combustion of charcoal in our ordinary fires, it burns with great rapidity, and the heat for a short time is intense; but when burned to keep up the animal heat, burning goes on more slowly, and, as a consequence, the heat is never so intense. In both cases, however, the same amount of heat is ultimately given off during combustion.

The heat generated in the animal system by vital action has a constant tendency to escape and be dissipated at the surface of the body. By interposing a non-conducting substance between the surface of the body and the external atmosphere, we prevent the loss of heat which would otherwise take place. Wool, fur, hair, and feathers are the warmest clothing; not because they impart heat to the body, but because they are bad conductors of heat, and therefore prevent the warmth of the body from being drawn off by the cold air.

D. W.

THE WHALE FISHERY.

FOR more than a hundred years the whale fishery was confined to the sea between Spitzbergen and Greenland, but early in the eighteenth century Davis Strait began to be frequented, and the ships sent thither gradually increased in number. This station was, however, soon *fished out* too, the whales seeking refuge from their assailants in the more distant recesses of the Arctic Seas. The north-western shores of Baffin Sea are now the principal resort of the whale fishers. This great sea was discovered in 1615, by William Baffin, the most learned navigator of his age, and one of the greatest names in the annals of Arctic adventure. Davis Strait, which forms the southern part of Baffin Sea, was discovered in 1585, by the celebrated John Davis, another of the noble band of Arctic adventurers.

The Greenland whale has no affinity with fishes; it is as much a mammal as the ox or the elephant, having warm blood, breathing air, bringing forth living young, and suckling them with true milk. Fishes are dependent for existence on the air contained in the water, but the whale has to come to the surface to breathe. The waters of the sea contain a considerable amount of air, supplied in various ways—by the dashing of the waves on the shore, by the storms which agitate its surface, and by the general circulation of the ocean currents.

The length of the Greenland whale is from fifty to sixty feet; but there is another species, called the great rorqual, which has been found nearly one hundred feet in length.

The gullet of the whale is so small as not to admit the passage of a fish so large as a herring; hence its support is derived from creatures of very small bulk. When the whale feeds it swims with its mouth wide open. The water with all its contents rushes into the immense cavity, and filters out at the sides between the plates of whalebone, which are so close together, and so finely fringed on the inner edge with hair, that every particle of solid matter is retained.

Though the whale, like all other mammalia, is formed for breathing air alone, and must therefore come to the surface of the sea at certain intervals, yet these intervals are occasionally of great length. The whale can remain an hour under water, or, in an emergency, even nearly two hours, though it ordinarily comes up to breathe at intervals of eight or ten minutes, except when feeding, when it is sometimes a quarter of an hour or twenty minutes submerged.

It is an object of importance that the act of breathing should be performed with as little effort as possible, and therefore the windpipe is not made to terminate in the mouth, nor in nostrils placed at the extremity of the muzzle. If this were the case it would require a large portion of the head and body to be projected from the water, or else that the animal should throw itself into a perpendicular position; either of which postures would be inconvenient when swimming rapidly,—as, for example, endeavouring to escape when harpooned. The windpipe, therefore, communicates with the air at the very top of the head; which, by a peculiar rising or hump at that part, is the very highest part of the animal when horizontal: it can thus breathe when none of its body is exposed except the very orifice itself. The whale often begins to breathe when a little below the surface, and then the force with which the air is expired blows up the water lying above in a jet or stream: this, with the condensed moisture of the breath itself, constitutes what are called “the spoutings,” which are attended with a rushing noise that may be heard upwards of a mile off.

In the agony and terror caused by the blow of the harpoon, the whale usually plunges directly downward into the depths of the sea, and that with such force that the mouth has been found, on returning to the surface, covered with the mud of the bottom; while in some instances the skull, and in others the jaws, have been fractured by the violence with which they have struck the ground. A whale has been known to descend perpendicularly to the depth of a mile, as measured by the length of line “run out;” where the pressure of the immense body of water above must have

been equal to a ton upon every square inch ! Mr. Scoresby mentions a case in which a boat was accidentally entangled and carried down by a whale, but immediately recovered. From the intense pressure, the water had been forced into the pores of the solid oak, so that it was completely saturated, and sunk like lead : the paint came off in large sheets ; and the wood, thrown aside to be used as fuel, was found to be useless, for it would not burn. A piece of the lightest fir-wood, which was in the boat, came up in exactly the same soaked condition, having totally lost the power of floating. To resist such a pressure as this, the blow-holes of the whale tribe are closed with a valve-like stopper of great density and elasticity, somewhat resembling India-rubber, which, accurately fitting the orifice, excludes all water from the windpipe, becoming more tightly inserted in proportion to the pressure.

CAPTURING THE WHALE.

THE capture of this immense animal, from its vast strength, the fickle element on which it is pursued, and the dangers peculiar to the Arctic regions, is an adventure of extraordinary hazard. The ships, built for the purpose, and strengthened with abundance of oak and iron, leave the northern ports of this country early in April, and by the end of the month usually reach the scene of their enterprise. Arrived within the limits of constant day, an unceasing watch is kept for whales, by an officer stationed in a snug sort of pulpit called the crow's nest, made of hoops and canvas, and well secured at the main-top-mast head.

The boats, which combine strength and lightness, are always kept hanging over the sides and quarters of the ship, ready furnished for pursuit, so that, on the appearance of a whale being announced from aloft, one or more boats can be despatched in less than a minute.

Each boat carries a harpooner (whose station is in the bow), a steersman, and several rowers. In an open space in the bow of

the boat is placed a line, sometimes more than 4,000 feet in length, coiled up with beautiful regularity and scrupulous care. The end of this is fastened to the harpoon, a most important weapon, made of the toughest iron, somewhat in the form of an anchor, but brought to an edge and point. Instead of steel being employed, as is commonly supposed, the very softest iron is chosen for this important implement, so that it may be scraped to an edge with a knife. A long staff is affixed to the harpoon, by which it is wielded.

The boat is swiftly but silently rowed up to the unconscious whale, and, when within a few yards, the harpooner darts his weapon into its body. Smarting and surprised, the animal descends into the depth of the ocean, but carries the harpoon sticking fast by the barbs, while the coiled line runs out with amazing velocity. A sheave or pulley is provided, over which it passes; but if by accident it slips out of its place, the friction is so great that the bow of the boat is speedily enveloped in smoke, and instances are not unfrequent of the gunwale bursting into a flame, or even of the head of the boat being actually sawn off by the line. To prevent this, a bucket of water is always kept at hand, to allay the friction.

When a boat is "fast" to the whale, a little flag is instantly hoisted in the stern, as a signal to the ship, and other boats are at once despatched to its assistance. Sometimes, before help can arrive, the united lines of the boats first sent are all run out; in which case the men are obliged to cut the line, and lose it with the whale, or the boat would be dragged under water. But generally some of the free boats can approach sufficiently near the animal, on its return to the surface, to dart another harpoon into its body. Perhaps it again dives, but soon returns much exhausted. The men now thrust into its body long and slender steel lances; and, aiming at the vitals, these wounds soon prove fatal: blood mixed with water is discharged from the blow-holes, and presently streams of blood alone are ejected, which frequently drench the boats and men, and colour the sea far around. Sometimes the last agony of the victim is marked by convulsive motions with the tail, attended

with imminent danger; but at other times it yields its life quietly, turning gently over on its side. The flags are now struck, three hearty cheers resound, and the unwieldy prey is towed in triumph to the ship.

The whale, in attempting to escape, sometimes exerts prodigious strength, and inflicts upon its pursuers both personal danger and loss of property. In the year 1812, a boat's crew belonging to the *Resolution* struck one on the margin of a floe. Supported by a second boat, they felt much at their ease,—there being scarcely an instance in which the assistance of a third is required in such circumstances. Soon, however, a signal was made for more line, and as Mr. Scoresby was pushing with his utmost speed, four oars were raised as a sign of the greatest distress. The boat was now seen with its bow on a level with the water, while the harpooner, from the friction of the line, was enveloped in smoke. At length, when the relief was within a hundred yards, the crew were seen to throw their jackets upon the nearest ice, and then leap into the sea; after which the boat rose into the air, and, making a majestic curve, disappeared beneath the waters with all the line attached to it. The crew were saved. A vigorous pursuit was immediately commenced; and the whale, being traced through narrow and intricate channels, was discovered considerably to the eastward, when three harpoons were darted at it. The line of two other boats was then run out, when, by an accidental entanglement, it broke, and enabled the whale to carry off in all about four miles of rope, which with the boat were valued at £150. The daring fishers again gave chase. The whale was seen, but missed. A third time it appeared, and was reached; two more harpoons were struck, and the animal, being plied with lances, became entirely exhausted, and yielded to its fate. It had by that time drawn out 10,440 yards, or about six miles of line! Unfortunately, through the disengagement of a harpoon, a boat and thirteen lines, nearly two miles in length, were detached and never recovered.

THE LAST SEARCH FOR FRANKLIN.

Of all the great enterprises of the world, none have been so enthusiastically taken up, so ably and resolutely prosecuted, and so tardily accomplished, as the discovery of the "North-west Passage." For more than three centuries successive generations of brave and skilful navigators have given themselves to the work. To the grand old seamen of Elizabeth's reign it was "the one thing left undone whereby a great mind might become notable;" and Martin Frobisher, and many another stout-hearted navigator, set forth to exhaust this last source of human distinction, by clearing a passage to Cathay through the dark Arctic seas.

From the earliest researches of John Cabot at the end of the fifteenth century, to the recent voyage of the *Fox*, there have been about one hundred and thirty expeditions, illustrated by two hundred and fifty books and printed documents, of which no fewer than one hundred and fifty have been issued in our own country. But the grim guardians of the Pole kept jealous watch over the mystery of their land, and with awful battery of crashing icebergs waged battle to the death with all invaders. The labours of two generations of seamen and travellers, the sacrifice of one hundred lives, were required to pierce within the veil; and when at length the secret was won, the victor perished in the hour of triumph. Fourteen years ago the North-west Passage was discovered by Sir John Franklin; but it was only in the autumn of 1859 that the news reached England.

From the discoveries of M'Clintock and Hobson, we can now follow the track of Franklin and his companions as they hastened to their doom. In the spring of 1845 the *Erebus* and *Terror*, with a gallant company of one hundred and thirty-four, all tried men, left our shores for the far north. They were provided with supplies sufficient for three years. The command of the vessels was given to Sir John Franklin and Captain Crozier. Sir John Franklin had been in several of the previous expeditions to the Arctic regions, and now, when more than sixty years of age, he was

ready to renew his efforts to solve the great problem of a North-west Passage. Uniting a love of adventure with a singleness of purpose, like that other great navigator, Columbus, he was the very man to be the leader of such an enterprise. "In the whole course of my experience," says Sir Edward Parry, "I have never known a man like Franklin: with all the tenderness of heart of a simple child there was all the greatness and magnanimity of a hero." It is said that the North American Indians characterized his mingled qualities of courage and kindness, by calling him "that great chief who would not kill a mosquito!"

The last letters received from the expedition were written from Whale-fish Islands, on the Greenland coast of Davis Strait. They breathed a very hopeful spirit, and spoke of the comfort of the crew.

On July 26, 1845, a whaler exchanged greetings with the vessels. They were then seen moored to an iceberg, waiting for an opening into the great body of ice which fills the middle of Baffin Sea, in order to reach the entrance to Lancaster Sound. This was the last sight and the last homeward intelligence of Franklin's ships. "I wish I could convey to you," says the last letter of one of the officers, written as the ships were passing into the fatal seas, "a just idea of the immense stock of good feeling, good humour, and real kindness of heart, in our small mess. We are very happy."

The first part of their voyage was successful beyond all precedent. In two seasons they had sailed over five hundred miles of previously unexplored waters, and had discovered the North-west Passage. The spring of 1847 found them locked up in the ice stream off Cape Felix, but they were only ninety miles from the known sea off the coast of America. Franklin was then alive, and all were well. But ere the summer came their leader was no more. He died on the 11th of June, 1847. Before the toilsome search, which his faithful wife urged on with such self-sacrificing devotion, had even commenced, he was at rest,—

"His last sea-fight was fought,—
His wreath of glory won."

Before the dark shadow of coming disaster had settled upon his expedition, while the great object of his life seemed almost accom-

plished, surrounded by his comrades, with all the comforts the ships could afford, he died, and was released.

"Not for him that hour of terror,
When, the long ice-battle o'er,
In the sunless day his comrades
Deathward trod the Polar shore.

Spared the cruel cold and famine,
Spared the fainting heart's despair,
What but that could mercy grant him?—
What but that has been *her* prayer?"

The death of their beloved leader must have made a mournful vacancy in the little band on board the *Erebus* and *Terror*. But they were not men to be disheartened. Captain Crozier succeeded to the command, and the daily routine of duty went on steadily as before. So the summer passed, and autumn came. The prospect before them began to look dismal indeed. Scurvy was already showing itself among the crews, their provisions would fail before another year, winter was close at hand, and still they were drifting helplessly in the ice-pack.

Slowly they drifted to the south. Ten miles, twenty miles, thirty miles were passed over; only sixty miles of ice remained between them and the sea off the American coast; one narrow lane of open water would have saved them,—but not a foot of open water was in sight. At last the ice-stream ceased to drift. Fifteen miles N. N. W. of Point Victory, the dread winter of 1847-8, with disease, and cold, and want, and darkness, closed around those forlorn and desperate men.

An escape by land was now their only hope, and every effort was made during the winter to get all things in readiness to start at the earliest practicable moment. When that time arrived, eight officers and twelve men, one after another, had shared the fate of Sir John Franklin. The survivors, one hundred and five in number, wan, half starved, and scurvy-stricken, piled up their sledges with all descriptions of gear, and on the 22d of April, 1848, under the lead of Captains Crozier and Fitzjames, took their way to King William Land.

They were three days traversing the intervening distance of

fifteen miles, and the sad conviction was already pressing upon them that they had overrated their physical strength. A few miles north-west of Point Victory they found a record deposited by Lieutenant Gore. The hand that wrote it was now cold in death. With a hand almost as cold, Captain Fitzjames proceeded to write round its margin those few but graphic words which tell all we know of this last sad page in their history. The record, thus completed, was placed in a cairn built on the assumed site of Sir James Ross's pillar, at Point Victory. There the party were to rest for the night; and on the morrow, the 26th of April, 1848,—about the time that the first searching expedition was getting ready to sail from England,—they were to set out for the Great Fish River.

Here all positive knowledge of their movements comes to an end. What afterwards befell them can be stated only from conjecture, based upon the statements of the Esquimaux, and the various relics that have been discovered.

THE LAST SEARCH FOR FRANKLIN—Continued.

In England, meanwhile, the disappearance of Sir John Franklin and his crews in the Arctic night gave rise to enterprises of nobler heroism than the mere advancement of geographical discovery, in the search for the missing ships. About twenty vessels and more than a thousand men were at sundry times engaged in the search, which commanded the sympathy, not only of our own country, but also of America, France, and Russia.

“Where is he?—where? Silence and darkness dwell
About him, as a soul cut off from men.
Shall we behold him yet a citizen
Of mortal life? Will he return to tell
(Prisoner from Winter's very citadel
Broken forth) what he before has told, again,
How to the hearts and hands of resolute men,
God aiding, nothing is impossible?
Alas! the enclosure of the story wave
Is strong, and dark the depths of Polar night:
Yet One there is omnipotent to save;
And this we know, if comfort still we crave,
Into that dark he took with him a light—
The lamp that can illuminate the grave.”

Lady Franklin, with a devotion and perseverance which no disappointments could damp, spent her life and fortune in the endeavour to clear up the mystery of the frozen zone. She maintained a voluminous correspondence on the subject with every part of the globe, consulted all the most eminent authorities on Arctic explorations, pressed the Government into action, and spared neither labour nor outlay to promote the great object which she had at heart.

At length Dr. Rae brought home word, got at second hand from the Esquimaux, of a body of white men having been seen, sick and worn, toiling through the snow toward the Great Fish River, and of a number of skeletons having been found in the track they followed. Franklin and his crews were then gazetted as lost. Lady Franklin, however, was not satisfied. There was still a chance that some of them were alive, and that another expedition might reveal—

"How Franklin's ploughing barks wedge on
Through splintering fields, with battered shares,
Lit only by the spectral dawn,
The mask that mocking darkness wears;—
Or how o'er embers black and few,
The last of shivered masts and spars,
He sits amid the frozen crew
In council with the norland stars."

She had already sent out three expeditions, and finding the Government unwilling to resume the search, she devoted the remainder of her fortune—some £10,000—to fitting out the *Fox* and despatching the expedition which, under the command of Captain M'Clintock, proved so successful.

There were not wanting abundance of eager volunteers to join in the enterprise, perilous as it was. Offers of assistance poured in from every side; and many who had never been to sea in their lives now came forward, ready to brave all the hardships and dangers of an Arctic voyage. Captain Allen Young, one of the best officers in the merchant service, though just home, sick and worn, from the Black Sea, where he had been indefatigably engaged during the greater part of the Crimean War, not only joined the expedition as sailing master, but subscribed £500

toward its expenses. And many another instance might be recorded of generous sympathy for Lady Franklin and the enterprise she had undertaken. At length the little steam yacht *Fox* was fitted up to meet the exigencies of an Arctic voyage, manned and officered by twenty-five gallant and experienced volunteers, and ready for sea.

In taking leave of them, Lady Franklin's last words were: "I am sure you will do all that man can do for the attainment of all these objects; my only fear is that you may spend yourselves too much in the effort; and you must, therefore, let me tell you how much dearer to me, even than any of them, is the preservation of the valuable lives of the little band of heroes who are your companions and followers. May God, in his great mercy, preserve you all from harm amidst the labours and perils which await you, and restore you to us in health and safety as well as honour. As to the honour I can have *no* misgiving. It will be yours as much if you fail (since you *may* fail, in spite of every effort) as if you succeed; and be assured that, under *any and all circumstances whatever*, such is my unbounded confidence in you, you will possess, and be entitled to, the enduring gratitude of your sincere and attached friend, JANE FRANKLIN."

The *Fox* left Aberdeen on 1st July, 1857, and by the middle of the next month was suddenly brought to a dead halt in Melville Bay. Not a drop of water was to be seen in the direction they wished to go—the door of the Arctic world was rudely shut in their face, and the impenetrable bar of ice, which extended far and wide in front of them, told them plainly enough that there was no admittance. M'Clintock could not bear the idea of meekly retreating, and spending an idle winter in Greenland; and an enticing lane of water opening up in the ice, after a day or two, the *Fox* dashed into it, hoping to push through the ice. Before morning the treacherous floes had closed behind her, cutting off both advance and retreat. A few days more and she was rivetted, beyond all hope of rescue, in the midst of the frozen sea. In vain they struggled to get away, blasting the edges of the floe with gunpowder, now pushing forward, now trying back. There was no

help for them; the ice held on with a firm, relentless grip, and they were doomed to winter in the moving pack.*

After eight months of imprisonment, they were carried back by the floating ice nearly twelve hundred geographical miles—drifting now quickly, now slowly, according to the strength of the wind, which seemed to be one of the chief agents in hastening the vast continent of ice toward the latitudes of its dissolution. Toward the end of March the ice began to relax its grasp, and by the 12th of April had lost its hold upon the *Fox*, which was now drifted ingloriously out of the Arctic regions—not without a narrow escape from destruction amidst the dying convulsions of the mighty pack. Huge bergs and hummocks of ice went crashing and churning round them—a single blow from any of which would have been instant annihilation. “After last night,” wrote M’Clintock, who had been at the engines for twenty-four hours, the engineer having died, “I can understand how a man’s hair turns gray in a day.” The *Fox* managed to keep out of harm’s way, however, and the next morning was dancing gaily on the open sea. Instead of the sullen, death-like torpor, to which they had been so long accustomed, everything around them bespoke life and motion. “It seemed,” said one of them, “as if we had risen from the dead.”

THE LAST SEARCH FOR FRANKLIN—Continued.

After a brief repose on the coast of Greenland, the *Fox* was back among the ice again. At Lancaster Sound they fell into the clutches of the “pack,” but, after a day or two, shook themselves free, and made for Pond Bay. There they communicated with the natives, and satisfied themselves that the missing ships were nowhere in that neighbourhood. At Beechy Island they set up a handsome tombstone, sent out by Lady Franklin, in memory of Sir John and his companions; and the end of August found them

* “To the uninhabited,” says Captain M’Clintock, “it may be as well to observe, that each winter the sea called Baffin’s Bay freezes over; in spring this vast body of ice breaks up, and drifting southward in a mass—called the main pack, or the middle ice—obstructs the passage across from east to west.”

at the eastern entrance of Bellot Strait, in a somewhat dangerous situation.

"With the cunning and activity worthy of her name," writes M'Clintock, "our little craft warily avoided a tilting match with the stout blue masses, which whirled about, as if with wilful impetuosity, through the narrow channel. Some of them were so large as to ground even in six or seven fathoms water. Many were drawn into the eddies, and, acquiring considerable velocity in a contrary direction, suddenly broke bounds, charging out into the stream, and entering into mighty conflict with their fellows. After such a frolic the masses would revolve peaceably, or unite with the pack, and quietly await the day of their wished-for dissolution—may it be near at hand! Nothing but strong hope of success induced me to encounter such dangerous opposition. I not only hoped, but almost felt that we deserved to succeed."

Four times they dashed up the strait, only to be driven back by the ice; the fifth time they cleared their way from end to end. Not far beyond the west entrance to the strait a bar of ice prevented further progress; and, as the winter was rapidly coming on, they prudently went back to a little harbour they had observed, and wintered there, much in the same way as they had done the previous year. "Very dull times," says the journal;—"no amount of ingenuity could make a diary worth the paper it is written on."

With the spring the sledges were got out, and the wild dogs put in harness. Captain M'Clintock and two companions, with a couple of sledges and fifteen dogs, paid a visit to the Boothians in the vicinity of the magnetic pole.

Upon the dress of one of the natives whom Captain M'Clintock fell in with he observed a naval button; and, on inquiry, found it was one of numerous relics, in the possession of the Esquimaux thereabout, of a crew whose ship had been crushed several years previously by the ice off King William Island, and who afterwards perished near the Great Fish River. An old man declared that he himself had seen the ship go down.

There was still one of the missing ships to be accounted for,

and extended searching journeys were commenced on the 2d April. Captain M'Clintock and Lieutenant Hobson journeyed together by sledge as far as Cape Victoria, where they learned that a second ship had drifted on shore at King William Island in the fall of the same year in which the other had been crushed. Hobson, therefore, started northward in search of the wreck, while M'Clintock went down the east side of the island, toward the Fish River. Near Cape Norton they reached a snow village, the inhabitants of which—"good-humoured, noisy thieves"—were very friendly. From them M'Clintock obtained a number of silver spoons and forks and other relics, in return for a quantity of needles. They told him that the wreck had been carried away piecemeal by their countrymen, and that hardly any of it was left; that there had been many books, but that all had been long ago destroyed by the weather; and that the white men had dropped by the way as they went to the Fish River.

At Cape Herschel M'Clintock found a skeleton in the snow, and at Cape Crozier a large heavy boat, previously visited by Hobson, at the bottom of which lay two mangled human skeletons—one, that of a slight young person,—the other, that of a large, strongly-made, middle-aged man. A great quantity of tattered clothing was piled up in the boat, and there were also watches, chronometers, silver spoons, books, &c. Two double-barrelled guns, one barrel in each loaded and cocked, leaning against the boat's side, seemed to indicate that the poor fellows had been on the look-out for some passing animal to make a meal of. The only provisions found were tea and chocolate, which could never support life in such a climate.

Lieutenant Hobson had been more fortunate. On the 6th of May he pitched his tent beside a large cairn upon Point Victory. Lying among some loose stones which had fallen from the top of this cairn was found a small tin case containing a record, the substance of which is briefly as follows:—

"This cairn was built by the Franklin expedition. The Erebus and Terror spent their first winter at Beechy Island, after having ascended Wellington Channel to lat. 77° N., and returned by the

west side of Cornwallis Island. On the 12th of September 1846 they were beset, in lat. 70° 05' N., and 98° 23' W. long. Sir John Franklin died on the 11th of June 1847. On the 22d of April 1848 the ships were abandoned, five leagues to the N.N.W. of Point Victory; and the survivors, one hundred and five in number, landed here, under the command of Captain Crozier."

This paper was dated the 25th of April 1848, and upon the following day they intended to start for the Great Fish River. A vast quantity of clothing and stores of all sorts lay^a strewn about, as if here every article had been thrown away which could possibly be dispensed with—pickaxes, shovels, cooking utensils, iron-work, rope, blocks, canvas, a dip-circle, a sextant marked "Frederic Hornby, R.N.," a small medicine chest, oars, &c. Lieutenant Hobson continued his search until within a few days' march of Cape Herschel, without finding any trace of the wreck or of natives.

Hobson's journey illustrates forcibly the last sad march of the lost crews. Although supplied with plenty of fresh meat, pemmican, &c., with the lightest possible baggage to draw, and a number of dogs to assist, his men suffered a good deal, and he himself excessively. He was so much reduced with scurvy that he was not able to stand, and for more than forty days had been upon his sledge. Throughout the journey he had killed only one bear and a few ptarmigan. What, therefore, must have been the condition of the poor fellows in the Franklin expedition, already worn and wasted with privation, sickness, and anxiety, with heavy sledges to drag along, without dogs, and with the barest possible sustenance!

The object of the expedition being now accomplished, the *Fox* only waited till she could get away from the ice, and then returned to England, with great difficulty escaping the clutches of the "pack," which would fain have cut off her retreat.

The great problem of the North-west Passage has now been solved; the mystery which overhung the fate of Franklin and his band has been cleared up—thanks to Lady Franklin's devotion, and the intrepidity and courage of M'Clintock and his gallant

associates; and the "one thing left undone, whereby a great mind may become notable," must be sought elsewhere.

Captain M'Clintock has been knighted, as an acknowledgment of his gallantry.

J. H. FYFE.

SIR JOHN FRANKLIN.

THE Polar clouds uplift—a moment and no more—
And through the snowy drift we see them on the shore,
A band of gallant hearts, well-ordered, calm, and brave,
Braced for their closing parts,—their long march to the grave.

Through the snow's dazzling blink, into the dark they've gone:—
No pause: the weaker sink, the strong can but strive on,
Till all the dreary way is dotted with their dead,
And the shy foxes play about each sleeping head.

Unharm'd the wild deer run, to graze along the strand,
Nor dread the loaded gun beside each sleeping hand.
The remnant that survive onward like drunkards reel,
Scarce wotting if alive, but for the pangs they feel.

The river of their hope at length is drawing nigh—
Their snow-blind way they grope, and reach its banks to die!
Thank God, brave Franklin's place was empty in that band!
He closed his well-run race not on the iron strand.

Not under snow-clouds white, by cutting frost-wind driven,
Did his true spirit fight its shuddering way to heaven;
But warm, aboard his ship, with comfort at his side
And hope upon his lip, the gallant Franklin died.

His heart ne'er ached to see his much-loved sailors ta'en;
His sailors' pangs were free from their loved captain's pain.
But though in death apart, they are together now;—
Calm, each enduring heart,—bright, each devoted brow!

Punch.

HENRY HUDSON.

ONE of the boldest and most successful of early navigators was the celebrated Henry Hudson, discoverer of that vast inland sea now known by the name of Hudson's Bay.

In a small vessel, and with a crew of only ten men and a boy, he first distinguished himself, in 1607, in an attempt to reach China by the Arctic seas to the north of Europe. He succeeded in reaching a very high latitude, within nine degrees of the Pole, where the impassable barrier of ice checked his further progress, and obliged him to return home by Spitzbergen. This failure to discover a north-east passage did not deter Hudson from renewing the attempt. The keenest interest was felt on this subject by the maritime nations of Europe, among whom it then formed a favourite topic of debate. Next year, accordingly, Hudson again set sail, hoping to solve this problem. Keeping more to the eastward than on his former voyage, he at last reached Nova Zembla, where the solid ice again arrested his progress, and convinced him that a north-eastern passage did not exist. The correctness of this judgment has been established by the more accurate knowledge of these dreary regions which we now possess. In 1609 he made a final but still unsuccessful search for a north-east passage. Baffled by the ice, as on his former voyages, he happily resolved to pursue his explorations in another quarter, and crossed the Atlantic to America, where, with most insignificant means, his skill and daring were destined to achieve the greatest results.

He sailed along the coast of North America, and at length was rewarded for his toils by the discovery of the bay on which New York stands, and of the magnificent river which, as he was the first to explore it, has since borne his name,—the Hudson. How striking the change which has taken place since Hudson's ship passed Sandy Hook and anchored in what is now the lower bay of New York! Manhattan Island, then probably uninhabited, is now the site of the second commercial metropolis of the world, with more than half a million of inhabitants, while the stream itself swarms with shipping from every quarter of the globe.

Happy, indeed, would it have been for Hudson if he could have closed his career on the banks of the river whose beauty he was the first to witness and describe, and thus have escaped the sorrowful and mysterious catastrophe which awaited him next year.

He soon after returned to England, and obtained the command of a vessel of fifty-five tons' burden, manned by twenty-three men and victualled for six months. In this humble craft he set sail on what proved to be his last voyage. After touching at the Orkney Islands, he steered his course to Iceland, where he witnessed one of nature's grandest spectacles—Mount Hecla in the blaze of a violent eruption surrounded by perpetual snows. The crew landed, and having killed a number of wild fowl, cooked them in one of the hot springs of this wonderful island.

Again weighing anchor, Hudson passed the south of Greenland till he reached the strait which now bears his name. Here, in addition to the ordinary difficulties and dangers of navigation among the ice, he had to struggle against a mutiny among his crew; but, in spite of all, this intrepid explorer boldly pushed on till his vessel ploughed the waters of that great inland sea now known as Hudson's Bay. He did not know for a long time that it was a bay, but indulged the hope that he had discovered what he had so long sought—a passage by the north-west to China. Indeed the extent of its surface amply justified this expectation, since, with the exception of the Mediterranean, it is the largest inland sea in the world.

Being obliged to pass the winter in these frost-bound regions, on the 1st of November, after seeking winter quarters, his men found a suitable spot for beaching their vessel. Ten days afterwards they were frozen in, with so scanty a stock of provisions, that, on the most stinted allowance, it was hardly sufficient to last till, by the return of spring, they could expect a release from the ice. It is impossible to describe the hardships of that winter, during which, notwithstanding all the birds, fishes, and animals serviceable for food which they could succeed in catching, they were always suffering from want and in dread of starvation. When we are told that they were finally compelled to live upon moss and frogs, we may form some faint conception of their awful privations,

When the ice broke up Hudson prepared for the homeward voyage. The last ration of bread was dealt out to the crew on the day of their setting sail. As, with a long and perilous voyage before them, they had not other provisions for the entire crew for more than ten days, a report that their commander had concealed a quantity of bread for his own use was readily believed by the famishing men, and a mutiny, headed by a man named Green, broke out on the 21st of June. Hudson was seized and his hands bound on the deck of his own vessel, where his word should have been law. The mutineers, not satisfied with this cruel indignity, followed it up by an act of inhumanity which it is dreadful to think that British seamen could have perpetrated:—they put the captain, together with the sick and those whom the frost had deprived of the use of their limbs, into the shallop. The conduct of the carpenter, however, forms a striking contrast to the base heartlessness of the mutineers. Refusing to remain in the ship, he nobly preferred to share the fate of Hudson and his disabled shipmates. Soon afterwards the crew cast the boat adrift with its hapless freight, and stood out to sea. Doubtless in the great inland sea which they had discovered Hudson and his miserable companions found a grave; for the boat was never seen or heard of more.

Two days after the mutineers had sailed they encountered a violent storm, and for fourteen days were in the greatest danger from the ice. That storm was probably fatal to their intrepid commander and his forlorn party, who may thus have escaped a still more terrible death from want and exposure. We contemplate with very different feelings the just retribution which overtook the guilty mutineers. They made the best of their way home in the ship which they had thus foully obtained; but not one of the ringleaders lived to reach the land. The rest, after suffering the most awful extremities of famine, finally gained the shore. None of them were ever brought to trial for their misdeeds;—probably because those who were deepest in guilt had already paid the penalty of their crimes.

The melancholy end of Hudson is more affecting than the deaths

even of Columbus, Cortez, and Pizarro, in the preceding century. His talents, courage, and perseverance, rank him among the first navigators of any age. In the comparative infancy of discovery in the northern regions, he deserves to take the lead. Though treacherously abandoned in the great inland sea which he had discovered, he has not, like many of his contemporaries, been ungenerously forgotten by posterity. His skill and daring awaken the highest admiration, while the mystery of his fate causes his name even yet to be mentioned with pity.

THE FUR COUNTRIES.

IN the year 1669 a Company was formed in London, under the direction of Prince Rupert, for the purpose of prosecuting the fur trade in the regions surrounding Hudson's Bay. This Company obtained a charter from Charles II., granting to them and their successors, under the name of "The Governor and Company of Adventurers Trading into Hudson's Bay," the sole right of trading in all the country watered by rivers flowing into Hudson's Bay. The charter also authorized them to build and fit out men-of-war, establish forts, prevent any other company from carrying on trade with the natives in their territories, and required that they should do all in their power to promote discovery.

Armed with these powers, then, the Hudson's Bay Company established a fort near the head of James's Bay. Soon afterwards several others were built, in different parts of the country; and before long, the Company spread and grew wealthy, and eventually extended their trade far beyond the chartered limits.

Imagine an immense extent of country, many hundred miles broad and many hundred miles long, covered with dense forests, expanded lakes, broad rivers, wide prairies, dreary swamps, and mighty mountains; and all in a state of primeval simplicity—undefaced by the axe of civilized man, and untenanted by aught save a few roving hordes of Red Indians and myriads of wild animals. Imagine amid this wilderness a number of small squares, each en-

closing half-a-dozen wooden houses and about a dozen men, and between each of these establishments a space of forest varying from fifty to three hundred miles in length, and you will have a pretty correct idea of the Hudson's Bay Company's territories, and of the number of, and distance between their forts. The idea, however, may be still more correctly obtained, by imagining populous Great Britain converted into a wilderness and planted in the middle of Rupert's Land. The Company, in that case, would build *three* forts in it—one at the Land's-end, one in Wales, and one in the Highlands; so that in Britain there would be but three hamlets, with a population of some thirty men, half-a-dozen women, and a few children! The Company's posts extend, with these intervals between, from the Atlantic to the Pacific Ocean, and from within the Arctic Circle to the northern boundaries of the United States.

The country is divided into four large departments:—the Northern department, which includes all the establishments in the far north and frozen regions; the Southern department, including those to the south and east of this, the post at the head of James's Bay, and along the shores of Lake Superior; the Montreal department, including the country in the neighbourhood of Montreal, up the Ottawa River, and along the north shore of the Gulf of St. Lawrence and Esquimaux Bay; and the Columbia department, which comprehends an immense extent of country to the west of the Rocky Mountains, including the Oregon territory,—which, although the Hudson's Bay Company still trade in it, now belongs to the Americans.

These departments are divided into a number of districts, each under the direction of an influential officer; and these, again, are subdivided into numerous establishments, forts, posts, and out-posts.

The name of *fort* is given to all the posts in the country, but some of them certainly do not merit the name; indeed few of them do. The only two in the country that are real, *bonâ fide* forts, are Fort Garry and the Stone Fort, in the colony of Red River, which are surrounded by stone walls with bastions at the corners. The others are merely defended by wooden pickets or

stockades; and a few, where the Indians are quiet and harmless, are entirely destitute of defence of any kind. Some of the chief posts have a complement of about thirty or forty men; but most of them have only ten, five, four, and even *two*, besides the gentleman in charge. As in most instances these posts are planted in a wilderness far from men, and the inhabitants have only the society of each other, some idea may be formed of the solitary life led by many of the Company's servants.

From the great extent and variety of feature in the country occupied by the fur traders, they subsist, as may be supposed, on widely different kinds of food. In the prairie, or plain countries, animal food is chiefly used, as there thousands of deer and bisons wander about, while the woods are stocked with game and wild-fowl. In other places, however, where deer are scarce and game not so abundant, fish of various kinds are caught in the rivers and lakes; and in other parts of the country they live partly upon fish and partly upon animal food. Vegetables are very scarce in the more northern posts, owing to the severity of the winter, and consequent shortness of summer. As the Company's servants are liable, on the shortest notice, to be sent from one end of the continent to the other, they are quite accustomed to change of diet;—one year rejoicing in buffalo-humps and marrow-bones in the prairies of the Saskatchewan, and the next devouring hung white-fish and scarce venison in the sterile regions of Mackenzie River; or varying the meal with a little of that delectable substance often spoken of by Franklin, Back, and Richardson, as their only dish,*—a lichen or moss which grows on the most barren rocks, and is only used as food in the absence of all other provisions.

The trade carried on by the Company is in peltries of all sorts, oil, dried and salted fish, feathers, quills, &c. The following is a list of some of their principal articles of commerce:—

Beaver-skins; bear-skins, black, brown, white or polar, and grizzly; badger-skins; buffalo or bison robes; skins of the reindeer, the red deer, and the moose or elk; feathers of all kinds; fox-skins, black, silver, red, white, and blue; goose-skins; ivory,

* *Tripe-de-roche*.

(tusks of the walrus); lynx-skins; marten-skins; otter-skins; seal and whale oil; swan-skins; salmon, salted; seal-skins; wolf-skins wolverine-skins.

The most valuable of the furs mentioned in the above list is that of the *black fox*. This beautiful animal resembles in shape the common fox of England, but it is much larger, and jet black, with the exception of one or two white hairs along the back-bone and a pure white tuft on the end of the tail. A single skin sometimes brings from twenty-five to thirty guineas in the British market; but—they are very scarce. The *silver fox* differs from the black fox only in the number of white hairs with which its fur is sprinkled; and the more numerous the white hairs, the less valuable does it become. The *red fox* bears a much inferior fur to the other kinds; yet it is a good article of trade, as this species is very numerous. The *white fox* is of less value than the red, and is also very numerous, particularly on the shores of Hudson's Bay. The variety termed the *blue fox* is neither numerous nor valuable. It is of a dirty bluish-gray colour, and seldom makes its appearance at the Company's posts.

Beaver, in days of yore, was the staple fur of the country; but, alas! the silk hat has given it its death-blow, and the star of the beaver has now probably set for ever—that is to say, with regard to men; probably the animals themselves fancy that their lucky star has just risen. The most profitable fur in the country is that of the marten. It somewhat resembles the Russian sable, and generally maintains a steady price. These animals, moreover, are very numerous throughout most part of the Company's territories, particularly in the region of Mackenzie River, whence great numbers are annually sent to England.

All the above animals and a few others are caught in steel and wooden traps by the natives; while deer, buffaloes &c., are run down, shot, and snared in various ways.

Trade is carried on with the natives by means of a standard valuation, called in some parts of the country a *castor*. This is to obviate the necessity of circulating money, of which there is little or none, excepting in the colony of Red River. Thus, an Indian

arrives at a fort with a bundle of furs, with which he proceeds to the Indian trading-room. There the trader separates the furs into different lots, and, valuing each at the standard valuation, adds the amount together, and tells the Indian (who has looked on the while with great interest and anxiety) that he has got fifty or sixty castors; at the same time he hands the Indian fifty or sixty little bits of wood in lieu of cash, so that the latter may know, by returning these in payment of the goods for which he really exchanges his skins, how fast his funds decrease. The Indian then looks round upon the bales of cloth, powder-horns, guns, blankets, knives, &c., with which the shop is filled, and, after a good while, makes up his mind to have a small blanket. This being given him, the trader tells him that the price is six castors; the purchaser hands back six of his little bits of wood, and selects something else. In this way he goes on till all his wooden cash is expended, and then, packing up his goods, departs to show his treasures to his wife, and another Indian takes his place. The value of a castor is from one to two shillings. The natives generally visit the establishments of the Company twice a year—once in October, when they bring in the produce of their autumn hunts; and again in March, when they come in with that of the great winter hunt.

• The number of castors that an Indian makes in a winter hunt varies from fifty to two hundred, according to his perseverance and activity, and the part of the country in which he hunts. The largest amount I ever heard of was made by a man called Piaquata-Kiscum, who brought in furs on one occasion to the value of two hundred and sixty castors. The poor fellow was soon afterwards poisoned by his relatives, who were jealous of his superior abilities as a hunter, and envious of the favour shown him by the white men.

After the furs are collected in spring at all the different outposts, they are packed in conveniently sized bales, and forwarded, by means of boats and canoes, to the three chief depôts on the sea-coast—namely, Fort Vancouver, at the mouth of the Columbia River, on the shores of the Pacific; York Fort, on the shores of

Hudson's Bay; and Moose Factory, on the shores of James's Bay; whence they are transported in the Company's ships to England. The whole country in summer is, consequently, in commotion with the passing and repassing of brigades of boats laden with bales of merchandise and furs; the still waters of the lakes and rivers are rippled by the paddle and the oar; and the long silent echoes which have slumbered in the icy embrace of a dreary winter, are now once more awakened by the merry voice and tuneful song of the hardy *voyageur*.

R. M. BALLANTYNE.

TRAPPING ANIMALS.

The different methods by which the Indian succeeds in snaring and trapping animals are numerous. A good idea of these may be had by following an Indian in his rounds.

Suppose yourself, gentle reader, standing at the gate of one of the forts in Hudson's Bay, watching a savage arranging his snow-shoes, preparatory to entering the gloomy forest. Let us walk with this Indian on a visit to his traps.

The night is very dark, as the moon is hid by thick clouds, yet it occasionally breaks out sufficiently to illumine our path to the Indian's wigwam, and to throw the shadows of the neighbouring trees upon the pale snow, which *crunches* under our feet as we advance, owing to the intense cold. No wind breaks the stillness of the night, or shakes the lumps of snow off the branches of the neighbouring pines and willows; and nothing is heard save the occasional crackling of the trees, as the severe frost acts upon their branches. The tent, at which we soon arrive, is pitched at the foot of an immense tree, which stands in a little hollow where the willows and pines are luxuriant enough to afford a shelter from the north wind. Suddenly the deer-skin robe that covers the aperture of the wigwam is raised, and a bright stream of warm light gushes out, tipping the dark green points of the opposite trees, and mingling strangely with the paler light of the moon—and the Indian stands erect in front of his solitary home, to gaze

a few moments on the sky, and judge of the weather, as he intends to take a long walk before laying his head upon his capote for the night. He is in the usual costume of the Cree Indians:—A large leathern coat, very much overlapped in front, and fastened round his waist with a scarlet belt, protects his body from the cold. A small rat-skin cap covers his head, and his legs are cased in the ordinary blue-cloth leggins. Large moccasins, with two or three pair of blanket socks, clothe his feet; and fingerless mittens, made of deer-skin, complete his costume. After a few minutes passed in contemplation of the heavens, the Indian prepares himself for the walk. First he sticks a small axe in his belt, serving as a counterpoise to a large hunting-knife and fire-bag which depend from the other side. He then slips his feet through the lines of his snow-shoes, and throws the line of a small hand-sledge over his shoulder. The hand-sledge is a thin flat slip or plank of wood, from five to six feet long by one foot broad, and is turned up at one end. It is extremely light, and the Indians invariably use it when visiting their traps, for the purpose of dragging home the animals or game they may have caught. Having attached this sledge to his back, he stoops to receive his gun from his faithful *squaw*,* who has been watching his operations through a hole in the tent; and throwing it on his shoulder, strides off, without uttering a word, across the moonlit space in front of the tent, turns into a narrow track that leads down the dark ravine, and disappears in the shades of the forest.

The forest is now almost dark, the foliage overhead having become so dense that the moon only penetrates through it in a few places, causing the spots on which it falls to shine with a strange silvery light, and rendering the surrounding masses darker by contrast. The faint outline of an old snow-shoe track, at first discernible, is now quite invisible; but still the Indian moves forward with rapid, noiseless step, as sure of his way as if a broad beaten track lay before him. In this manner he moves on for nearly two miles, sometimes stooping to examine closely the

* *Squeiau* is the Indian for a woman. *Squaw* is the English corruption of the word, and is used to signify a wife.

newly made track of some wild animal, and occasionally giving a glance at the sky through the openings in the leafy canopy above him, when a faint sound in the bushes ahead brings him to a full stop. He listens attentively, and a noise, like the rattling of a chain, is heard proceeding from the recesses of a dark, wild-looking hollow, a few paces in front. Another moment, and the rattle is again distinctly heard; a slight smile of satisfaction crosses the Indian's dark visage, for one of his traps is set in that place, and he knows that something has been caught. Quickly descending the slope, he enters the bushes whence the sound proceeds, and pauses when within a yard or two of his trap, to peer through the gloom. A cloud passes off the moon, and a faint ray reveals, it may be, a beautiful black fox caught in the snare. A slight blow on the snout from the Indian's axe-handle kills the unfortunate animal; in ten minutes more it is tied to his sledge, the trap is reset and again covered over with snow, so that it is almost impossible to tell that anything is there; and the Indian pursues his way.

The steel-trap used by the Indians is almost similar to the ordinary rat-trap of England, with this difference, that it is a little larger, is destitute of teeth, and has two springs in place of one. A chain is attached to one spring, for the purpose of fixing a weight to the trap, so that the animal caught may not be able to drag it far from the place where it was set. The track in the snow enables the hunter to find his trap again. It is generally set so that the jaws, when spread out flat, are exactly on a level with the snow. The chain and weight are both hid, and a thin layer of snow spread on the top of the trap. The bait (which generally consists of chips of a frozen partridge, rabbit, or fish) is then scattered around in every direction; and, with the exception of this, nothing distinguishes the spot. Foxes, beavers, wolves, lynxes, and other animals, are caught in this way, sometimes by a fore-leg, sometimes by a hind-leg, and sometimes by two legs at once, and occasionally by the nose. Of all these ways the Indians prefer catching by two legs, as there is then not the slightest possibility of the animal escaping. When foxes are caught by one leg, they often *eat it off* close to the trap, and escape on the other

three. I have frequently seen this happen; and I once saw a fox caught which had evidently escaped in this way, as one of its legs was gone, and the stump healed up and covered again with hair. When they are caught by the nose they are almost sure to escape, unless taken out of the trap very soon after being caught, as their snouts are so sharp or wedge-like that they can pull them from between the jaws of the trap without much difficulty.

Having now described the way of using this machine, we will rejoin the Indian, whom we left on his way to the next trap. There he goes, moving swiftly over the snow mile after mile, as if he could not feel fatigue, turning aside now and then to visit a trap, and giving a short grunt when nothing is in it, or killing the animal when caught, and tying it on the sledge. Toward midnight, however, he begins to walk more cautiously, examines the priming of his gun, and moves the axe in his belt, as if he expected to meet some enemy suddenly. The fact is, that close to where he now stands are two traps which he set in the morning close to each other, for the purpose of catching one of the formidable coast wolves. These animals are so sagacious that they will scrape all round a trap, let it be ever so well set, and, after eating all the bait, walk away unhurt. Indians, consequently, endeavour in every possible way to catch them, and, among others, by setting *two* traps close together; so that while the wolf scrapes at one, he may perhaps put his foot in the other. It is in this way that our Indian friend's traps are set, and he now proceeds cautiously towards them, his gun in the hollow of his left arm. Slowly he advances, peering through the bushes, but nothing is visible; suddenly a branch crashes under his snow-shoe, and with a savage growl a large wolf bounds toward him, landing almost at his feet! A single glance, however, shows the Indian that both traps are on its legs, and that the chains prevent its further advance. He places his gun against a tree, draws his axe from the belt, and advances to kill the animal. It is an undertaking, however, of some difficulty. The fierce brute, which is larger than a Newfoundland dog, strains every nerve and sinew to break its chains, while its eyes glisten in the uncertain light, and foam curls from

its blood-red mouth. Now it retreats as the Indian advances, grinning horribly as it goes; and anon, as the chains check its further retreat, it springs with fearful growl toward the Indian, who slightly wounds it with his axe, as he jumps backward just in time to save himself from the infuriated animal, which catches in its fangs the flap of his leggin, and tears it from his limb. Again the Indian advances, and the wolf retreats and again springs on him, but without success. At last, as the wolf glances for a moment to one side—apparently to see if there is ~~no~~ way of escape—quick as lightning the axe flashes in the air, and descends with stunning violence on its head; another blow follows, and in five minutes more the animal is fastened to the sledge.

R. M. BALLANTYNE.

THE SKATER AND THE WOLVES.

[The following remarkable story of an escape from wolves in America is related by Mr. Whitehead.]

DURING the winter of 1844 (he observes), I had much leisure to devote to the sports of a new country. To none of these was I more passionately addicted than to skating. The deep and sequestered lakes, frozen by the intense cold of a northern winter, present a wide field to the lovers of this pastime. Often would I bind on my skates and glide away up the glittering river, and wind each mazy streamlet that flowed beneath its fetters on toward the parent ocean. Sometimes I would follow the track of a fox or otter, and run my skates along the mark he had left with his dragging tail, until the trail would enter the woods. Sometimes these excursions were made by moonlight; and it was on one of these latter occasions that I had a rencounter which even now, with kind faces around me, I cannot recall without a nervous feeling.

I had left my friend's house one evening just before dusk, with the intention of skating a short distance up the noble river which glided directly before the door. The night was beautifully clear. A peerless moon rode through an occasional fleecy cloud, and

stars twinkled from the sky and from every frost-covered tree in millions. Light also came glinting from ice, and snow-wreath, and encrusted branches, as the eye followed for miles the broad gleam of the river, that like a jewelled zone swept between the mighty forests on its banks. And yet all was still. The cold seemed to have frozen tree, and air, and water, and every living thing. Even the ringing of my skates echoed back from the hill with a startling clearness; and the crackle of the ice, as I passed over it in my course, seemed to follow the tide of the river with lightning speed.

I had gone up the river nearly two miles, when, coming to a little stream which empties into the larger, I turned into it to explore its course. Fir and hemlock of a century's growth met overhead, and formed an archway radiant with frost-work. All was dark within; but I was young and fearless, and as I peered into an unbroken forest that reared itself on the borders of the stream, I laughed with very joyousness. My wild hurrah rung through the silent woods, and I stood listening to the echo that reverberated again and again, until all was hushed. Suddenly a sound arose—it seemed to me to come from beneath the ice; it was low and tremulous at first, but it ended in one long wild yell. I was appalled. Never before had such a noise met my ears. Presently I heard the brushwood on shore crash, as though from the tread of some animal—the blood rushed to my forehead—my energies returned, and I looked around me for some means of escape.

The moon shone through the opening at the mouth of the creek by which I had entered the forest, and, considering this the best means of escape, I darted toward it like an arrow. It was hardly a hundred yards distant, and the swallow could scarcely have excelled me in flight; yet, as I turned my head to the shore, I could see two dark objects dashing through the brushwood at a pace nearly double in speed to my own. By their great speed, and the short yells which they occasionally gave, I knew at once that these were the much dreaded gray wolves.

I had never met with these animals; but, from the description

given of them, I had little pleasure in making their acquaintance. Their untamable fierceness and untiring strength render them objects of dread to every benighted traveller.

With their long gallop they pursue their prey, never straying from the track of their victim ; and though, perhaps, the wearied hunter thinks that he has at last outstripped them, he finds that they have but waited for the evening to seize their prey.

The bushes that skirted the shore flew past with the velocity of lightning as I dashed on in my flight to pass the narrow opening. The outlet was nearly gained—a few seconds more and I would be comparatively safe ; but in a moment my pursuers appeared on the bank above me, which here rose to the height of ten feet. There was no time for thought—I bent my head and dashed madly forward. The wolves sprang, but, miscalculating my speed, fell behind, while their intended prey glided out upon the river !

Nature turned me toward home. The light flakes of snow spun from the iron of my skates, and I was some distance from my pursuers, when their fierce howl told me I was still their fugitive. I did not look back ; I did not feel afraid, or sorry, or glad ;—one thought of home, of the bright faces awaiting my return, and of their tears if they never should see me, and then all the energies of body and mind were exerted for escape. I was perfectly at home on the ice. Many were the days that I had spent on my good skates, never thinking that they would thus prove my only means of safety. Every half minute a furious yelp from my fierce attendants made me but too certain that they were in close pursuit. Nearer and nearer they came,—at last I heard their feet pattering on the ice—I even felt their very breath and heard their snuffing scent ! Every nerve and muscle in my frame was stretched to the utmost tension.

The trees along the shore seemed to dance in an uncertain light, and my brain turned with my own breathless speed ; yet still my pursuers seemed to hiss forth their breath with a sound truly horrible, when an involuntary motion on my part turned me out of my course. The wolves, close behind, unable to stop, and as unable

to turn on the smooth ice, slipped and fell, still going on far ahead. Their tongues were lolling out; their white tusks were gleaming from their bloody mouths; their dark shaggy breasts were fleeced with foam; and as they passed me their eyes glared, and they howled with fury. The thought flashed on my mind that by this means I could avoid them,—namely, by turning aside whenever they came too near; for, by the formation of their feet, they are unable to run on ice except in a straight line.

I immediately acted upon this plan. The wolves having regained their feet, sprang directly toward me. The race was renewed for twenty yards up the stream; they were already close on my back, when I glided round and dashed directly past them. A fierce yell greeted my evolution, and the wolves, slipping on their haunches, sailed onward, presenting a perfect picture of helplessness and baffled rage. Thus I gained nearly a hundred yards at each turning. This was repeated two or three times, every moment the animals becoming more excited and baffled.

At one time, by delaying my turning too long, my sanguinary antagonists came so near that they threw their white foam over my dress as they sprang to seize me, and their teeth clashed together like the spring of a fox-trap! Had my skates failed for one instant,—had I tripped on a stick, or had my foot been caught in a fissure of the ice,—the story I am now telling would never have been told. I thought all the chances over. I knew where they would first seize me if I fell. I thought how long it would be before I died; and then of the search for my body, that would already have its tomb; for oh! how fast man's mind traces out all the dread colours of death's picture, only those who have been near the grim original can tell.

But I soon came opposite the house, and my hounds—I knew their deep voices—roused by the noise, bayed furiously from their kennels. I heard their chains rattle: how I wished they would break them!—then I should have had protectors to match the fiercest denizens of the forest. The wolves, taking the hint conveyed by the dogs, stopped in their mad career, and after a

few moments turned and fled. I watched them until their forms disappeared over a neighbouring hill; then, taking off my skates, I wended my way to the house, with feelings which may be better imagined than described. But even yet I never see a broad sheet of ice by moonlight without thinking of that snuffing breath and those fearful things that followed me so closely down that frozen river.—

Such is the strange tale of escape from the winter wolves of America. In Poland and Russia they are no less dreaded; and the traveller, even when flying over the snow in his swift sledge, often finds the speed of his horses barely sufficient to rescue him from the hungry pack. On such occasions their merciless rapacity often proves his means of escape; for no sooner does he shoot down one of the foremost, than the whole pack crowd round it and tear it to pieces! By such means time is gained, and the affrighted horses, fleeing at their utmost speed, at length dash with the sledge into the shelter of the long looked-for station.

THE BEAVER.

THE beaver has acquired a very extensive fame among mankind, the foundation of which is twofold;—first, the exceeding softness and richness of his fur, which made his skin very valuable as clothing to the native American tribes before Europeans came to the country, and which have since caused it to be still more highly valued by civilized nations all over the world; and secondly, his distinguished reputation as a builder. Both these characters of the animal result from the same cause, namely this, that he is intended to live in a very cold climate,—that is, a climate which is very cold for half the year,—and to get his living from the roots of plants growing under water, which, during the cold season, is covered with ice from one to three feet thick. To meet these exigencies, he is provided with an extremely thick and soft fur, and with certain very remarkable building instincts, by which he

is enabled at all times, however cold the weather and however thick the ice, to procure access to the water.

The first object of the beaver, in his engineering operations, is to keep the water deep in the stream that he inhabits, in order to prevent it from freezing to the bottom. To effect this, he forms a company, and the whole band proceed to build a dam. They gnaw down trees and bushes, and drag them into the stream at the place which they have chosen for the dam, and pack them together in a close and impenetrable mass, ten or twelve feet thick at the bottom, and diminishing gradually toward the top. As they proceed they fill up all the interstices of the work with stones, gravel, mud, turf, roots, and everything else that they can bring. Of course a great deal of their work is washed away by the current while they are building; but by means of their indomitable perseverance they finally succeed, and a massive and permanent obstruction to the stream is formed. In process of time the trunks and stems of trees which they have introduced into their work decay, and the whole settles and consolidates into a permanent bank, which endures sometimes for centuries. Of course, so long as the pond is occupied the dam needs constant watching and frequent repairs; but this work the company always attend to in the most prompt and systematic manner.

While laying the materials of which the dam is composed, the beavers go continually to and fro over their work, trampling down the soft substances with their paws, and patting them with their broad flat tails. This patting motion of their tails, which they make instinctively when they walk about upon the ground, gave rise to the story that the beaver uses his tail as a trowel. This, though it is not literally and exactly true, is, after all, not far from the truth; for the effect of the patting is analogous to that produced by the trowel of the mason in laying stones in mortar.

Besides the dam, the beavers build what may be called houses on the bank, where they live during the winter, sheltered from the cold and protected from the wolves and other wild animals that would otherwise prey upon them. These houses are built of logs of wood formed from the trunks of trees, which the beavers

gnaw down in the adjoining forests, and then cut to proper lengths for their purpose. They dig in the ground to get good foundations, and then build up walls four or five feet high, much in the same way as they construct the dams. They then lay other trunks of trees across from one wall to the other, and cover the roof thus formed with stones, bushes, moss, mud, and other similar materials, and smooth the whole over at last with their paws and their tails, so as to make a sort of mound of their work, with a hollow in the centre. The whole structure is so firmly put together that the wolverines and wild cats cannot get in. It is very difficult even for men to break through such a mass.

From these habitations subterranean passages run in various directions;—some open into the pond under the ice, so as to afford the inhabitants free access to the water at all times; and others lead to holes and caverns which the animals make as places of retreat from their enemies when they are alarmed, and perhaps for warmth in times of extreme cold.

It is a very curious circumstance that the beavers do all their work in the night, and thus no person can watch them at their operations except at a great disadvantage. In the day-time they keep very quiet. Their motive, probably, in thus arranging their time,—if action prompted by animal instinct may be said to have a motive,—is doubtless to avoid attracting the attention of their enemies.

The beavers were once very numerous throughout the whole northern portion of the territory now occupied by the United States. In all the settled parts of the country, however, they have nearly or entirely disappeared; and so valuable are their skins, and so closely do the hunters and trappers follow up the work of taking them, that in a short time, if the present state of things continue, the whole race will be completely exterminated.

ABBOTT.

THE SIEGE OF QUEBEC.

(A.D. 1759.)

The closing scene of French dominion in Canada was marked by
 circumstances of deep and peculiar interest. The pages of romance
 can furnish no more striking episode than the battle of Quebec.
 The skill and daring of the plan which brought on the combat,
 and the success and fortune of its execution, are unparalleled.
 There, a broad, open plain, offering no advantages to either party
 was the field of fight. The contending armies were nearly equal
 in military strength, if not in numbers. The chiefs of each were
 men already of honourable fame. France trusted firmly in the
 wise and chivalrous Montcalm: England trusted hopefully in the
 young and heroic Wolfe. The magnificent stronghold which was
 staked upon the issue of the strife (stood close at hand) For
 miles and miles around, the prospect extended over as fair a land
 as ever rejoiced the sight of man; mountain and valley, forest and
 waters, city and solitude, grouped together in forms of almost
 ideal beauty. Quebec stands on the slope of a lofty eminence on the left bank
 of the St. Lawrence. A table-land extends westward from the
 citadel for about nine miles; the portion of the heights nearest
 the town on the west is called the Plains of Abraham, Wolfe
 had discovered a narrow path winding up the side of the steep
 precipice from the river. For miles on either side there was no
 other possible access to the heights. Up this narrow path Wolfe
 decided to lead secretly his whole army and make the Plains his
 battle ground!

single deserter might have imperilled the success of the expedition. ^{single hand} had its exact object been known. At nine o'clock at night the ^{endangered} first division of the army, 1,600 strong, silently removed into flat-bottomed boats: the soldiers were in high spirits; Wolfe led in ^{himself} person. About an hour before day-light the flotilla ^{flat water} fell down with the ebb tide. "Weather favourable; a star-light night," ^{stilled} Silently and swiftly, unchallenged by the French sentries, ^{up} Wolfe's flotilla dropped down the stream in the shade of the ^{dark} overhanging cliffs. The rowers scarcely stirred the waters with their oars; the soldiers sat motionless. Not a word was spoken, save by the young general. He, as a midshipman on board of his boat afterwards related, repeated in a low voice, to the officers by his side, "Gray's Elegy in a Country Churchyard," and as he concluded the beautiful verses, he said, "Now, gentlemen, I would rather be the author of that poem than take Quebec!" But while Wolfe thus, in the poet's words, gave vent to the intensity of his ^{excitement} feelings, his eye was constantly bent upon the dark outline of the ^{boundary} heights under which he hurried past. He recognised at length the appointed spot, and leaped ashore. Some of the leading boats, conveying the light company of the 78th Highlanders, had in the meantime been carried about two hundred yards lower down by the strength of the tide. These Highlanders, under Captain Donald McDonald, were the first to land. Immediately over their heads hung a woody precipice, without path or track upon its rocky face; on the summit a French sentinel marched to and fro, still unconscious of their presence. Without a moment's hesitation, McDonald and his men dashed at the height. They scrambled up, holding on by rocks and branches of trees, guided only by the stars that shone over the top of the cliff. Half the ascent was already won, when for the first time. "Qui vive?" (broke the silence of the night.) "La France," answered the Highland captain, with ready self-possession, and the sentry shouldered his musket and pursued his round. In a few minutes, however, the rustling of the trees close at hand at length alarmed the French guard. They hastily turned out, fired one irregular volley down the precipice, and fled in panic. The captain, M. de Vergor,

Wolfe's Half

remain his place
also
the enemy
taken up
ascended
ditch
 alone, though wounded, (stood his ground) When summoned to
 surrender, he fired at one of the leading assailants, but was instantly
 overpowered. In the meantime nearly five hundred men landed
 and made their way up the height: those who had first reached
 the summit then took possession of the intrenched post at the top
 of that path which Wolfe had selected for the ascent of his army.
 Wolfe, Monckton, and Murray landed with the first division.
 As fast as each boat was cleared it put back for reinforcements to
 the ships, which had now also floated down with the tide nearly
 opposite to the point of disembarkation. The battalions formed
 on the narrow beach at the foot of the winding path, and as soon
 as completed, each ascended the cliff, when they again formed upon
 the Plains above. The boats plied busily: company after company
 was quickly landed; and as soon as the men touched the shore
 they swarmed up the steep ascent with ready alacrity. When
 morning broke, the whole disposable force of Wolfe's army stood
 in firm array upon the table-land above the cove. Only one gun,
 however, could be carried up the hill, and even that (was not got
 into position) without incredible difficulty.
 Montcalm was already worsted (as a general); it was still, how-
 ever, left him to fight as a soldier. His order of battle was
 steadily and promptly made. He commanded the centre column
 in person. His total force engaged was 7,520 men, besides Indians.
 Wolfe showed only a force of 4,828 of all ranks; but of these
 every man was a trained soldier. *well disciplined*
 The French attacked. After a spirited advance made by a
 swarm of skirmishers, their main body, in long unbroken lines,
 was seen approaching Wolfe's position. Soon a murderous and
 incessant fire began. The British troops fell fast. Wolfe, at the
 head of the 28th, was struck in the wrist, but not disabled.
 Wrapping a handkerchief round the wound, he hastened from one
 rank to another, exhorting the men to be steady and to reserve
 their fire. No English soldier pulled a trigger: with matchless
 endurance they sustained the trial. Not a company wavered: their
 arms shouldered as if on parade, and motionless, save when they
 closed up the ghastly gaps, they waited the word of command.
vacant place
 central column
 hand to hand.

When the head of the French attack had reached within forty yards, Wolfe gave the order to "fire." At once the long row of muskets was levelled, and a volley, distinct as a single shot, flashed from the British line. For a moment the advancing columns still pressed on, shivering like pennons in the fatal storm, but a few paces told how terrible had been the force of the long-suspended blow.)

Montcalm commanded the attack in person. Not fifteen minutes had elapsed since he had first moved on his line of battle, and already all was lost! But the gallant Frenchman, though ruined, was not dismayed: he rode through the broken ranks, cheered them with his voice, encouraged them by his dauntless bearing, and, aided by a small redoubt, even succeeded in once again presenting a front to his enemy.

Meanwhile Wolfe's troops had reloaded. He seized the opportunity of the hesitation in the hostile ranks, and ordered the whole British line to advance. At first they moved forward in majestic regularity, receiving and paying back, with deadly interest the volleys of the French; but soon the ardour of the soldiers broke through the restraints of discipline,—they increased their pace to a run, rushing over the dying and the dead, and sweeping the living enemy off their path. Wolfe was a second time wounded in the body; but he concealed his suffering, for his duty was not yet accomplished: again a ball from the redoubt struck him on the breast; he reeled on one side, but at the moment this was not generally observed. "Support me," said he to a grenadier officer who was close at hand, "that my brave fellows may not see me fall." In a few seconds, however, he sank, and was borne a little to the rear.

The brief struggle fell heavily upon the British, but was ruinous to the French. They wavered under the carnage: the columns which death had disordered were soon broken and scattered. Montcalm, with a courage that rose above the wreck of hope, galloped through the groups of his stubborn veterans, who still made head against the enemy, and strove to show a front of battle. His efforts were vain; the head of every formation was

destroyed
fled
utter
 swept away before that terrible musketry; in a few minutes the French gave way in all directions. Just then their gallant general fell with a mortal wound: from that time all was utter rout, *defeat*
giving up
 While the British troops were carrying all before them, their young general's life was ebbing fast away. From time to time he tried with his faint hand to clear away the death-mist that gathered on his sight; but the efforts seemed vain, for presently he lay back, and gave no signs of life beyond a heavy breathing and an occasional groan. Meantime the French had given way, *fled*
heartily
 and were flying in all directions. A grenadier officer seeing this, called out to those around him, "See! they run!" The words caught the ear of the dying man; he raised himself, like one aroused from sleep, and asked eagerly, "Who run?" "The enemy, sir," answered the officer; "they give way everywhere."
order
 "Go, one of you, to Colonel Burton," said Wolfe: "tell him to march Webbe's (the 48th) regiment with all speed down to the St. Charles river, to cut off the retreat." His voice grew faint as he spoke, and he turned on his side, as if seeking an easier position. When he had given this last order his eyes closed in death.
When
 When the news reached England, triumph and lamentation were strangely intermingled. Astonishment and admiration at the splendid victory, with sorrow for the loss of the gallant victor, filled every breast. Throughout all the land were illuminations and public rejoicings, except in the little Kentish village of Westerham, where Wolfe was born, and where his widowed mother now mourned her only child.

Wolfe's
 Wolfe's body was embalmed, and borne to the river for conveyance to England. The army escorted it in solemn state to the beach. They mourned their young general's death as sincerely as they had followed him in battle bravely. Their attachment to him had softened their toils; their confidence in him had cheered them in disasters; and his loss now turned their triumph into sadness. When his remains arrived at Plymouth, they were landed with the highest honours: minute-guns were fired, the flags were hoisted half-mast high, and an escort with arms reversed received the coffin on the shore. They were then conveyed to

Greenwich, and buried beside those of his father, who had died but a few months before.

After further successes of the British in other parts of Canada, ^{more} under Generals Amherst, Haviland, and Sir William Johnson, the French cause became utterly hopeless. On the 8th of September a British force of 16,000 men assembled before Montreal, and on the same day a capitulation was signed which severed Canada from France for ever.

One of the most momentous political questions that have ever yet moved the human race was decided in this struggle. When a few English and French emigrants first landed among the Virginian and Canadian forests it began; when the British flag was hoisted on the citadel of Quebec it was decided. From that day the hand of Providence pointed out to the Anglo-Saxon race that to them was henceforth intrusted the destiny of the New World.

WARBURTON.

THE GREAT LAKES AND THE FALLS OF NIAGARA.

THE most striking feature of North America is the vast chain of lakes which separates Canada from the territory of the United States.

Lake Superior, the greatest of these inland seas, is the largest body of fresh water in the world. It covers an area nearly equal to that of England. Ships of the largest size traverse its waters; and in violent gales, its waves rise nearly as high as those of the ocean.

The four other principal lakes are, Lakes Huron, Michigan, Erie, and Ontario; from the last of which issue the surplus waters of the whole, forming the noble River St. Lawrence, which runs an uninterrupted course of seven hundred miles, till it reaches the Atlantic. There is thus a continuous current from the most remote tributary of Lake Superior to the Gulf of St. Lawrence, a distance of more than two thousand miles.

All these lakes are now traversed by steam and sailing vessels, which ply in every direction, and, by connecting canals and rivers, are year by year developing the vast resources of the country.

Capabilities of producing wealth.

*making
Buron.*

The St. Lawrence will probably one day become the great highway of communication between the Pacific and the Atlantic; and on its waters the western portion of the American continent will find an outlet for its enormous traffic. *a passage outward, foreign trade*

and an outlet for it
find means to pass through.

great, indistinctly, by long
trifles, & long reports,
life & mass; sky, heavens.

a reflection of the Sun on the
waters, while sails;

land covered with wood
of the timber: strong

and ~~the~~ ^{rule} ~~stop~~ ^{stop}

habitations of man; animals;
steeples; consecrated; Bible

These oceans. "These ocean lakes,
 Which in majestic indolence reposed,
 (Coquetting with the winds, or, mirror-like,
 Giving to upper worlds a mimic sun,
 Are now the paths of white-winged fleets, which bear
 The golden fruits of the rich harvest fields
 To far-off climes. The woodland shores,
 The towering pine, the stern-hearted oak,
 Have owned the sway of man; and waving grain
 Speaks of home and plenty. Towering spires
 Of temples dedicated to Him whose word
 Is life eternal, deck the verdant banks;
 And grateful strains of gratitude are hymned
 And the Sabbath stillness."

Buterac

Grand agent

11/11/11



Case 1:11-cv-00001-UNA Document 1-1 Filed 07/25/11 Page 1 of 1

all waves
1400000

July 1942



CONFIDENTIAL

W. J. ...
A. J. ...

1998



of land called Goat Island. The American Fall, on the one side of Goat Island, is one hundred and sixty-four feet high; but the Canadian or Horse-shoe Fall (so named from its semicircular form,) is the grander of the two. Its breadth is two thousand feet, and its height one hundred and fifty feet. It falls in one dense mass of green water, calm, unbroken, resistless; though at the edges it separates into drops, which fall like a shower of diamonds sparkling in the sun, and at times so lightly as to be driven up again by the current of air ascending from the deep below, where all is agitation and foam.

Looked at from below, the scene is sublime and overwhelming. The mighty river comes rushing over the brow of a hill; and, as you look up to it, it seems as if coming to overwhelm you; then meeting with the rocks as it pours down the declivity, it boils and frets like the breakers of the ocean. Huge mounds of water, smooth, transparent, and gleaming like an emerald, rise up and bound over some impediment, then break into silver foam, which leaps into the air in the most graceful and fantastic forms.

A little below the Falls, the Niagara resumes its usual soft and gentle beauty. The banks are high and beautifully wooded, and the river flows along in its course to Lake Ontario.

TO THE FALLS OF NIAGARA.

HAIL! Sovereign of the world of floods! whose majesty and might First dazzles, then enraptures, then o'erawes the aching sight: The pomp of kings and emperors, in every clime and zone, Grows dim beneath the splendour of thy glorious watery throne.

No fleets can stop thy progress, no armies bid thee stay,
But onward—onward—onward—thy march still holds its way;

The rising mists that veil thee as thy heralds go before,
And the music that proclaims thee is the thund'ring cataract's roar.

Thy diadem's an emerald, of the clearest, purest hue,
Set round with waves of snow-white foam and spray of feathery dew.

Small particles of water

2. (While tresses of the brightest pearls float o'er thine ample sheath, *vast*
beautiful And the rainbow lays its gorgeous gems in tribute at thy feet,) *surface of water*

color Thy reign is from the ancient days, (thy sceptre from on high;) *God*

lighted Thy birth was when the distant stars first lit the glowing sky; *show*

heavenly The sun, the moon, and all the orbs that shine upon thee now,

eyes Beheld the wreath of glory which first bound thine infant brow.

light And from that hour to this, in which I gaze upon thy stream,

from age to age From age to age, in winter's frost, or summer's sultry beam,

By day, by night By day, by night, without a pause, thy waves, with loud acclaim,

In ceaseless sounds In ceaseless sounds have still proclaimed the Great Eternal's name

For whether For whether on thy forest banks the Indian of the wood,

Or Or, (since his day,) the red man's foe on his fatherland has stood;

Whoe'er Whoe'er has seen thine incense rise, or heard thy torrents roar, *flow*

Must have knelt Must have knelt before the God of all, to worship and adore.

Accept, then Accept, then, O Supremely Great! O Infinite! O God!

From this From this (primeval altar) the green and virgin sod, *pure glassy earth*

The humble homage The humble homage that my soul in gratitude would pay *thankfulness*

To thee To thee, whose shield has guarded me through all my wand'ring way. *up to*

For if the ocean For if the ocean be as naught in the hollow of thine hand,

And the stars And the stars of the bright firmament in thy balance grains of sand;

If Niagara's If Niagara's rolling flood seems great to us who humbly bow—

O Great Creator O Great Creator of the whole, how passing great art thou! *ad.*

But though thy power But though thy power is far more vast than finite mind can scan,

Thy mercy Thy mercy is still greater, shown to weak, dependent man—

For him For him thou cloth'st the fertile globe with herbs, and fruit, and seed;

For him For him the seas, the lakes, the streams, supply his hourly need.

Around, on high Around, on high, or far, or near, the universal whole

Proclaims thy glory Proclaims thy glory, as the orbs in their fixed courses roll;

And from creation's And from (creation's grateful voice) the hymn ascends above, 9

While heaven re-echoes While heaven re-echoes back to earth the chorus—(God is love.)

J. S. BUCKINGHAM.

THE ATLANTIC OCEAN AND THE TELEGRAPH.

THE Atlantic Ocean stretches from the Arctic Circle on the north, ^{in the} to the Antarctic Circle on the south, a distance of 9,000 miles. Its breadth varies from 1,200 miles between the coasts of Green-^{changes} land and Norway, to 3,500 miles from the peninsula of Florida to Cape Verd, on the western coast of Africa. Humboldt compares the bed of the Atlantic to a long, deep valley, which ^{bottom} may be said to extend from pole to pole. The North At-^{Atlantic} lantic varies in depth from 6,000 to 25,000 feet. The deepest ^{part of the} part, says Lieutenant Maury, is probably between the Bermudas ^{in the} and the Grand Banks of Newfoundland; but how deep it may ^{be} be, yet remains (for the sounding-line to determine.) One result ^{of recent} of recent measurements of the depth of the Atlantic by the British and American navies is, the certain knowledge we now possess ^{ships} that the bed of the ocean, like the land, is diversified by moun-^{changes} tains and valleys, hills, table-lands, and plains.

Between Newfoundland and Ireland the bed of the Atlantic is so remarkably level, that it has received the name of the Tele-^{graphic} graphic Plateau. In making soundings for the telegraphic cable ^{bottoming} across this plateau, various specimens of the bottom were ^{brought} brought up, by means of an apparatus attached to the sounding-line. These ^{specimens} were submitted to the celebrated microscopist, Professor Ehren-^{berg} berg, and were found to consist of minute shells, perfect in form, ^{beautiful} some of them quite fresh, and having the remains of the animal in ^{dead bodies} them, showing that in this part of the Atlantic there are no currents to disturb the bottom of the sea. It is an established ^{fact} fact, indeed, that there is no running water at the bottom of ^{current} the deep sea. The agents which disturb the equilibrium of the ^{causes} ocean, giving violence to its waves and force to its currents, all reside near or above its surface; none of them have their home ^{in its depths} in its depths.

Wherever specimens of the bottom have been obtained by the ^{plummet} deep-sea plummet, they have been found to consist of minute ^{microscopic} microscopic shells. If the bottom were disturbed by currents, ^{small} only very small:

rubbed, these minute shells would be found scratched, and their sharp corners and edges broken off and rounded. Moreover, were they drifted about, sand and other scourings of the ocean would be mixed with them. But not so; the specimens brought up from the deep show no such mixture, and bear no marks of abrasion upon even their most delicate parts.

In these still and quiet waters at the bottom of the Atlantic it was decided to lay the telegraphic cable—the distance from land to land being about 1,600 miles.

In the summer of 1857 the Agamemnon of the British navy and the Niagara of the American navy were assigned by their respective governments to the duty of receiving on board and laying the submarine Atlantic cable. After several unsuccessful attempts in 1857 and 1858, the vessels met in mid-ocean, joined cables, and set out, the Niagara for her terminus in Trinity Bay, Newfoundland, and the Agamemnon for hers in Valencia Harbour.

On the 5th of August the cable was successfully landed on both shores; and a week afterwards, messages of congratulation were flashed across the ocean between the Queen of England and the President of the United States.

Though short-lived, it was a grand achievement. It demonstrated the possibility of uniting by telegraph the New World with the Old—an achievement destined yet to be one of the great events of the nineteenth century.

Referring to this subject, a distinguished author thus writes:—
 "Let me offer you two feebly outlined word-pictures of events which were transacted (on the same arena) at the interval of nearly four centuries. The epoch of the first is the autumn of 1492. The scene is the mid-Atlantic, and on its bosom floats the frail caravel of Columbus. It is midnight, and the astonished pilots are gazing with awe on the compass-needle, which has ceased to point to the North-star, and has veered round to the west; and they ask the great admiral what this unheard-of variation may mean. To him it is a mystery as well as to them, but he has an explanation which contents them; and for himself, however mysterious it may be, it is anew the finger of God bidding

him sail westward still; and he follows its new pointing, till it lands him on the shore he has so often seen in his dreams.

"The time of the second picture is 1858. The scene, as before, is the mid-Atlantic, and on its bosom a great English steam-ship is silently gliding with every sail furled. It is midnight again, and the sailors, as in the caravel four centuries ago, are gazing with intense eyes upon a quivering needle. It is not now, however, a mere compass-needle; but, armed with a tiny mirror, it lies in the centre of a coil of wire looped to the great cable, which, as signals pass along it, is every moment bringing the Old and the New Worlds nearer each other in time. Every quiver to east and west that the needle makes, as the voltaic current sweeps round the coil, flashes from the mirror a spot of light on a screen, and marks a step in progress; and all watch the face of the electrician, the Columbus of this voyage, to whom alone these spots of light are intelligible and eloquent of success. And so the mirrored, flashing galvanometer sways about, till the voyage ends; and then (*Gloria in excelsis* is literally quivered in light) as it was by its first singers the angels, and in unconscious repetition of its chant by the kneeling crews of Columbus four centuries ago.

"Let us wish all success to the telegraph everywhere. The best interests of the world are bound up in its progress, and its mission is emphatically one of peace. It does not merely speak swiftly but softly; and it offers men a common speech, in which all mankind can converse together.

"Men have spoken, men have dreamed,
Of a universal tongue;
Universal speech can be
Only when the words are sung.
(When our harp has all its strings,
And its music fills the air,
In a universal tongue
All the world shall share.)"

anticipates as a coming reality.
Language common to all mankind
is possible. When all mankind
join together in singing hymns
to God; it is possible only in music
an instrument. When our hearts find
complete form & harmony, we
rush up to heaven.

THE GULF STREAM.

currents in the ocean
has over the whole
source
flow
mass or bulk
 THERE is a river in the ocean. In the severest droughts it never fails, and in the mightiest floods it never overflows. Its banks and its bottom are of cold water, while its current is of warm. The Gulf of Mexico is its fountain, and its mouth is in the Arctic Seas. It is the Gulf Stream. There is in the world no other such majestic flow of waters. Its current is more rapid than the Mississippi or the Amazon, and its volume more than a thousand times greater.

streams
movements
interchange
between the
waters of the poles and those of the equator, and thus diminish
the extremes of heat and cold in every zone.
 The currents of the ocean are among the most important of its movements. They carry on a constant interchange between the waters of the poles and those of the equator, and thus diminish the extremes of heat and cold in every zone.

temperature
distance north
from the equator
other with the depression below the sea level
The climates in
each are regulated by circulation; but the regulators are, (on the
one hand, winds; on the other, currents.
 The sea has its climates as well as the land. They both change with the latitude; but one varies with the elevation above, the other with the depression below the sea level. The climates in each are regulated by circulation; but the regulators are, (on the one hand,) winds; on the other, currents.

in the land, sea
dependent on
climate
as are those of the dry land; for the same Almighty hand
which decked the lily and cares for the sparrow, fashioned also
the pearl and feeds the great whale, and adapted each to the
physical conditions by which his providence has surrounded it.
 The inhabitants of the ocean are as much the creatures of climate as are those of the dry land; for the same Almighty hand which decked the lily and cares for the sparrow, fashioned also the pearl and feeds the great whale, and adapted each to the physical conditions by which his providence has surrounded it. Whether of the land or the sea, the inhabitants are all his creatures, subjects of his laws, and agents in his economy. The sea, therefore, we may safely infer, has its offices and duties to perform; so, may we infer, have its currents; and so, too, its inhabitants: consequently, he who undertakes to study its phenomena must cease to regard it as a waste of waters. He must look upon it as a part of that exquisite machinery by which the harmonies of nature are preserved, and then he will begin to perceive the developments of order and the evidences of design.

From the Arctic Seas a cold current flows along the coasts of America, to replace the warm water sent through the Gulf Stream,

to moderate the cold of western and northern Europe. Perhaps the best indication as to these cold currents may be derived from the fishes of the sea. The whales first pointed out the existence of the Gulf Stream by avoiding its warm waters. Along the coasts of the United States all those delicate animals and marine productions which delight in warmer waters are wanting; thus indicating, by their absence, the cold current from the north now known to exist there. In the genial warmth of the sea about the Bermudas on one hand, and Africa on the other, we find in great abundance those delicate shell-fish and coral formations which are altogether wanting in the same latitudes along the shores of South Carolina.

No part of the world affords a more difficult or dangerous navigation than the approaches of the northern coasts of the United States in winter. Before the warmth of the Gulf Stream was known, a voyage at this season from Europe to New England, New York, and even to the Capes of the Delaware or Chesapeake, was many times more trying, difficult, and dangerous than it now is. In making this part of the coast, vessels are frequently met by snow-storms and gales which mock the seaman's strength, and set at naught his skill. In a little while his bark becomes a mass of ice; with her crew frosted and helpless, she remains obedient only to her helm, and is kept away for the Gulf Stream. After a few hours' run she reaches its edge, and almost at the next bound passes from the midst of winter into a sea at summer heat. Now the ice disappears from her apparel, and the sailor bathes his stiffened limbs in tepid waters. Feeling himself invigorated and refreshed with the genial warmth about him, he realizes out there at sea the fable of Antæus and his mother Earth. He rises up and attempts to make his port again, and is again, perhaps, as rudely met and beat back from the north-west; but each time that he is driven off from the contest, he comes forth from this stream, like the (ancient son of Neptune) stronger and stronger, until, after many days, his freshened strength prevails, and he at last triumphs and enters his haven in safety, though in this contest he sometimes falls to rise no more.

The ocean currents are partly the result of the immense evaporation which takes place in the tropical regions, where the sea greatly exceeds the land in extent. The enormous quantity of water there carried off by evaporation disturbs the equilibrium of the seas; but this is restored by a perpetual flow of water from the poles. When these streams of cold water leave the poles they flow directly toward the equator; but, before proceeding far, their motion is deflected by the diurnal motion of the earth. "At the poles they have no rotatory motion, and although they gain it more and more in their progress to the equator, which revolves at the rate of a thousand miles an hour, they arrive at the tropics before they have gained the same velocity of rotation with the intertropical ocean. On that account they are left behind, and, consequently, flow in a direction contrary to the diurnal rotation of the earth. Hence the whole surface of the ocean for thirty degrees on each side of the equator flows in a stream or current three thousand miles broad from east to west. The trade winds, which constantly blow in one direction, combine to give this great Equatorial Current a mean velocity of ten or eleven miles in twenty-four hours."

Were it not for the land such would be the uniform and constant flow of the waters of the ocean. The presence of the land interrupts the regularity of this great western movement of the waters, sending them to the north or south, according to its conformation.

The principal branch of the Equatorial Current of the Atlantic takes a north-westerly direction from off Cape St. Roque, in South America. It rushes along the coast of Brazil, and, after passing through the Caribbean Sea, and sweeping round the Gulf of Mexico, it flows between Florida and Cuba, and enters the North Atlantic under the name of the Gulf Stream, the most beautiful of all the oceanic currents.

In the Strait of Florida the Gulf Stream is thirty-two miles wide, two thousand two hundred feet deep, and flows at the rate of four miles an hour. Its waters are of the purest ultra-marine blue as far as the coasts of Carolina; and so completely are they

separated from the sea through which they flow, that a ship may be seen at times half in the one and half in the other.

As a rule, the hottest water of the Gulf Stream is at or near the surface; and as the deep-sea thermometer is sent down, it shows that these waters, though still much warmer than the water on either side at corresponding depths, gradually become less and less warm until the bottom of the current is reached. There is reason to believe that the warm waters of the Gulf Stream are nowhere permitted, in the oceanic economy, to touch the bottom of the sea. There is everywhere a cushion of cool water between them and the solid parts of the earth's crust. This arrangement is suggestive, and strikingly beautiful. One of the benign offices of the Gulf Stream is to convey heat from the Gulf of Mexico, —where otherwise it would become excessive,—and to dispense it in regions beyond the Atlantic, for the amelioration of the climates of the British Islands and of all Western Europe. (Now, cold water is one of the best non-conductors of heat, but if the warm water of the Gulf Stream were sent across the Atlantic in contact with the solid crust of the earth, comparatively a good conductor of heat, instead of being sent across, as it is, in contact with a non-conducting cushion of cool water to fend it from the bottom, all its heat would be lost in the first part of the way, and the soft climates of both France and England would be as that of Labrador, severe in the extreme, and ice-bound.)

It has been estimated that the quantity of heat discharged over the Atlantic from the waters of the Gulf Stream, in a winter's day, would be sufficient to raise the whole column of atmosphere that rests upon France and the British Islands from the freezing point to summer heat,

Every west wind that blows crosses the stream on its way to Europe, and carries with it a portion of this heat to temper there the northern winds of winter. (It is the influence of this stream that makes Erin the "Emerald Isle of the Sea," and that clothes the shores of Albion in evergreen robes;) while, in the same latitude, the coasts of Labrador are fast bound in fetters of ice.

As the Gulf Stream proceeds on its course, it gradually increases in width. It flows along the coast of North America to Newfoundland, where it turns to the east, one branch setting towards the British Islands, and away to the coasts of Norway and the Arctic Ocean. Another branch reaches the Azores, from which it bends round to the south, and, after running along the African coast, it rejoins the great equatorial flow, leaving a vast space of nearly motionless water between the Azores, the Canaries, and Cape de Verd Islands. This great area is the Grassy or Sargasso Sea, covering a space many times larger than the British Islands. It is so thickly matted over with gulf weeds that the speed of vessels passing through it is often much retarded. When the companions of Columbus saw it, they thought it marked the limits of navigation, and became alarmed. (To the eye, at a little distance, it seems substantial enough to walk upon.) Patches of the weed are always to be seen floating along the outer edge of the Gulf Stream. Now, if bits of cork or chaff, or any floating substance, be put into a basin, and a circular motion be given to the water, all the light substances will be found crowding together near the centre of the pool, where there is the least motion. Just such a basin is the Atlantic Ocean to the Gulf Stream; and the Sargasso Sea is the centre of the whirl. Columbus first found this weedy sea, in his voyage of discovery: there it has remained to this day, moving up and down, and changing its position like the calms of Cancer, according to the seasons, the storms, and the winds. Exact observations as to its limits and their range, extending back for fifty years, assure us that its mean position has not been altered since that time.

MAURY.

THE PILGRIM FATHERS.)

(A.D. 1620.)

A FEW years after the French Crown had founded a state in Canada, a handful of Puritan refugees founded a people in New England. They bore with them from the mother country a bitter hatred of the existing government, and a stern resolve to perish or be free. One small vessel—the *Mayflower*—held them, their wives, their children, and their scanty stores. So ignorant were they of the country of their adoption, that they sought its shores in the depth of winter, when nothing but a snowy desert met their sight. Dire hardships assailed them—many sickened and died; but those who lived strove bravely, though bitter was their trial—the scowling sky above their heads—the frozen earth under their feet—and, sorest of all, deep in their strong hearts the unacknowledged love of that venerable land which they had abandoned for ever.

But brighter times soon came:—the snowy desert changed into a fair scene of life and vegetation: the woods rang with the cheerful sound of the axe; the fields were tilled hopefully, the harvest gathered gratefully. Other vessels arrived, bearing more settlers—men for the most part like those who had first landed. Their numbers swelled to hundreds, thousands, tens of thousands. They formed themselves into a community; they decreed laws, stern and quaint, but suited to their condition. Far from seeking or accepting aid from the Government of England, they patiently tolerated their nominal dependence only because they were virtually independent. For protection against the savage—for relief in pestilence or famine—for help to plenty and prosperity—they trusted alone to God in heaven, and to their own right hand on earth.

The British colonization of the New World has led to results of immeasurable importance to mankind; and the now prosperous cities and busy seaports of America are prouder memorials of

the Anglo-Saxon race than all the splendours of Oriental conquest, *the magnificent temple to be made in America, the influence*

The breaking waves dashed high on a stern and rock-bound coast,
And the woods against a stormy sky their giant branches tossed,
And the heavy night hung dark the hills and waters o'er, *and*
When a band of exiles moored their bark on the wild New
England shore.

Not as the conqueror comes, they, the true-hearted, came,—
Not with the roll of stirring drums, and the trumpet that sings
of fame; *praises.*

Not as the flying come, in silence and in fear,—
(They shook the depths of the desert's gloom with their hymns of
lofty cheer.)

Amidst the storm they sang, and the stars heard and the sea!
And the sounding aisles of the dim wood rang to the anthems of
the free! *caused to sound.*

The ocean-eagle soared from his nest by the white waves' foam, *humbled not*
And the rocking pines of the forest roared;—this was their
welcome home!

There were men with hoary hair amidst that pilgrim-band;
Why had they come to wither there, away from their childhood's
land?

There was woman's fearless eye, lit by her deep love's truth; *bright*
There was manhood's brow serenely high; and the fiery heart of
youth, *undivided by*

{ What sought they thus afar? bright jewels of the mine?
The wealth of seas, the spoils of war!—they sought a faith's pure
shrine! }

{ Ay, call it holy ground, the soil where first they trod!
They have left unstained what there they found,—freedom to
worship God! }

Mrs. Hemans.

Am - 30 min - 10 - 30
WASHINGTON.

ROME had its Caesar, great and brave; but stain was on his wreath : *Victory*
 He lived the heartless conqueror, and died the tyrant's death.
 France had its eagle ; but his wings, though lofty they might soar,
 Were spread in false ambition's flight, and dipped in murder's gore.

Those hero-gods, whose mighty sway would fain have chained the
waves—

(Who fleshed their blades with tiger zeal to make a world of slaves)—

Who, though their kindred barred the path, still fiercely waded on—

Oh! where shall be their "glory" by the side of Washington?

He fought, but not with love of strife—he struck but to defend.

And ere he turned a people's foe, he sought to be a friend.

He strove to keep his country's right by reason's gentle word.

And sighed when fell injustice threw the challenge—sword to sword.

(He stood, the firm, the calm, the wise, the patriot and sage ;

He showed no deep, avenging hate—no burst of despot rage.)

He stood for liberty and truth, and dauntlessly led on,

Till shouts of victory gave forth the name of Washington.

18 (He saved his land, but did not lay his soldier trappings down—

To change them for the regal vest, and don a kingly crown.)

Fame was too earnest in her joy—too proud of such a son—

To let a robe and title mask a noble Washington.

England! my heart is truly thine—my loved, my native earth!—

The land that holds a mother's grave, and gave that mother birth!

19 (Oh! keenly sad would be the fate that thrust me from thy shore,

And faltering my breath that sighed, "Farewell for evermore!")

But did I meet such adverse lot, I would not seek to dwell

Where olden heroes wrought the deeds for Homer's song to tell.

94 Rome Away, thou gallant ship! I'd cry, and bear me swiftly on—

But bear me from my own fair land to that of Washington!

ELIZA COOKE.

VOYAGE ACROSS THE ATLANTIC IN A SAILING VESSEL.

To one given to day-dreaming, and fond of losing himself in reveries, a sea voyage is full of subjects for meditation; but then they are the wonders of the deep and of the air, and rather tend to abstract the mind from worldly themes. I delighted to loiter over the quarter-railing, or climb to the main-top, of a calm day, and muse for hours together on the tranquil bosom of a summer's sea; to gaze upon the piles of golden clouds just peering above the horizon, fancy them some fairy realms, and people them with a creation of my own;—to watch the gentle undulating billows rolling their silver volumes, as if to die away on those happy shores.

There was a delicious sensation of mingled security and awe with which I looked down, from my giddy height, on the monsters of the deep at their uncouth gambols;—shoals of porpoises tumbling about the bow of the ship; the grampus slowly heaving his huge form above the surface; or the ravenous shark darting, like a spectre, through the blue waters. My imagination would conjure up all that I had heard or read of the watery world beneath me; of the finny herds that roam its fathomless valleys; of the shapeless monsters that lurk among the very foundations of the earth; and of those wild phantasms that swell the tales of fishermen and sailors.

(Sometimes a distant sail, gliding along the edge of the ocean, would be another theme of idle speculation. (How interesting this fragment of a world, hastening to rejoin the great mass of existence!) (What a glorious monument of human invention,) which has, in a manner, triumphed over wind and wave; has brought the ends of the world into communion; has established an interchange of blessings, pouring into the sterile regions of the north all the luxuries of the south; has diffused the light of knowledge and the charities of cultivated life; and has thus bound together

those scattered portions of the human race between which nature seemed to have thrown an insurmountable barrier.

We one day descried a shapeless object drifting at a distance. At sea, everything that breaks the monotony of the surrounding expanse attracts attention. It proved to be the mast of a ship that must have been completely wrecked; for there were the remains of handkerchiefs, by which some of the crew had fastened themselves to this spar, to prevent their being washed off by the waves. There was no trace by which the name of the ship could be ascertained. The wreck had evidently drifted about for many months; clusters of shell-fish had fastened about it, and long seaweeds flaunted at its sides. But where, thought I, are the crew? Their struggle has long been over,—they have gone down amidst the roar of the tempest,—their bones lie whitening among the caverns of the deep. Silence, oblivion, like the waves, have closed over them, and no one can tell the story of their end. (What sighs have been wafted after that ship!) what prayers offered up at the deserted fireside of home! How often has the wife, the mother, pored over the daily news, to catch some casual intelligence of this rover of the deep! How has expectation darkened into anxiety, anxiety into dread, and dread into despair! (Alas! not one memento may ever return for love to cherish.) All that may ever be known is, that she sailed from her port, “and was never heard of more.”

The sight of this wreck, as usual, gave rise to many dismal anecdotes. This was particularly the case in the evening, when the weather, which had hitherto been fair, began to look wild and threatening, and gave indications of one of those sudden storms which will sometimes break in upon the serenity of a summer voyage. As we sat around the dull light of a lamp in the cabin, that made the gloom more ghastly, every one had his tale of shipwreck and disaster. I was particularly struck with a short one related by the captain.

“As I was once sailing,” said he, “in a fine stout ship across the Banks of Newfoundland, one of those heavy fogs which prevail in those parts rendered it impossible for us to see far ahead even in

the day-time; but at night the weather was so thick that we could not distinguish any object at twice the length of the ship. I kept lights at the mast-head, and a constant watch forward to look out for fishing-smacks, which are accustomed to lie at anchor on the Banks. The wind was blowing (a smacking breeze,) and we were also going at a great rate through the water, when suddenly the watch gave the alarm of "a sail a-head!" It was scarcely uttered before we were upon her. She was a small schooner at anchor, with her broadside towards us. The crew were all asleep, and had neglected to hoist a light. (We struck her just amidships.) The force, the size, and the weight of our vessel bore her down below the waves; we passed over her, and (were hurried on our course, quickly went down) "As the crashing wreck was sinking beneath us, I had a glimpse of two or three half-naked wretches rushing from her cabin. They just started from their beds to be swallowed shrieking by the waves. I heard their drowning cry mingling with the wind. The blast that bore it to our ears swept us out of all further hearing. I shall never forget that cry. It was some time before we could put the ship about, (she was under such headway) We returned, as nearly as we could guess, to the place where the smack had anchored. We cruised about for several hours in the dense fog. We fired signal-guns, and listened if we might hear the halloo of any survivors; but all was silent,—we never saw or heard anything of them more."

I confess these stories, for a time, put an end to all my fine fancies. The storm increased with the night. The sea was lashed into tremendous confusion. There was a fearful, sullen sound of rushing waves and broken surges. (Deep called unto deep.) At times the black volume of clouds overhead seemed rent asunder by flashes of lightning which quivered along the foaming billows, and made the succeeding darkness doubly terrible. The thunders bellowed over the wild waste of waters, and were echoed and prolonged by the mountain waves. As I saw the ship staggering and plunging among these roaring caverns, it seemed miraculous that she regained her balance or preserved her buoyancy. Her yards would dip into the water: her bow was almost buried beneath

destroy the waves. Sometimes an impending surge appeared ready to overwhelm her, and nothing but a dexterous movement of the helm preserved her from the shock.

When I retired to my cabin, the awful scene still followed me. The whistling of the wind through the rigging sounded like funeral wailings. The creaking of the masts, the straining and groaning of bulk-heads, as the ship laboured in the weltering sea, were frightful. As I heard the waves rushing along the sides of the ship, and roaring in my very ear, it seemed as if Death were raging round this floating prison, seeking for his prey: (the mere starting of a nail, the yawning of a seam, might give him entrance.)

A fine day, however, with a tranquil sea and favouring breeze, soon put all these dismal reflections to flight. It is impossible to resist the gladdening influence of fine weather and fair wind at sea. When the ship is decked out in all her canvas, every sail swelled, and careering gaily over the curling waves, how lofty how gallant she appears!—how she seems to lord it over the deep!

I might fill a volume with the reveries of a sea voyage, for with me it is almost a continual reverie; but it is time to get to shore.

It was a fine sunny morning when the thrilling cry of "land!" was given from the mast-head. None but those who have experienced it can form an idea of the delicious throng of sensations which rush into an American's bosom when he first comes in sight of Europe. (There is a volume of associations with the very name.) It is the land of promise, teeming with everything of which his childhood has heard, or on which his studious years have pondered.)

From that time until the moment of arrival it was all feverish excitement. The ships of war, that prowled like guardian giants along the coast,—the headlands of Ireland, stretching out into the Channel,—the Welsh mountains, towering into the clouds,—all were objects of intense interest. As we sailed up the Mersey, I reconnoitred the shores with a telescope. My eye dwelt with delight on neat cottages, with their trim shrubberies and green grass plots. I saw the mouldering ruin of an abbey over-run with ivy, and the taper spire of a village church rising from

the brow of a neighbouring hill;—all were characteristic of England.

The tide and wind were so favourable that the ship was enabled to come at once to the pier. It was thronged with people; some idle lookers-on, others eager expectants of friends or relatives. I could distinguish the merchant to whom the ship had been consigned. I knew him by his (calculating brow) and restless air. His hands were thrust into his pockets; he was whistling thoughtfully, and walking to and fro, a small space having been accorded him by the crowd, (in deference to his temporary importance.) There were repeated cheerings and salutations interchanged between the shore and the ship, as friends happened to recognise each other.

I particularly noticed one young woman, of humble dress but (interesting demeanour.) She was leaning forward from among the crowd. Her eye hurried over the ship as it neared the shore, to catch some (wished-for countenance.) She seemed disappointed and agitated; when I heard a faint voice call her name. It was from a poor sailor who had been ill all the voyage, and had excited the sympathy of every one on board. When the weather was fine, his mess-mates had spread a mattress for him on deck in the shade; but of late his illness had so increased that he had taken to his hammock, and only breathed a wish that he might see his wife before he died. He had been helped on deck as we came up the river, and was now leaning against the shrouds, with a countenance so wasted, so pale, so ghastly, that it was no wonder even the eye of affection did not recognise him. But at the sound of his voice her eye darted on his features;—it read at once a whole volume of sorrow; she clasped her hands, uttered a faint shriek, and stood wringing them in silent agony.

All now was hurry and bustle,—the meetings of acquaintances—the greetings of friends—the consultations of men of business. I alone was solitary and idle. I had no friend to meet, no cheering to receive. I stepped upon the land of my forefathers—but felt that I was a stranger in the land.

WASHINGTON IRVING.

SCENES FROM "UNCLE TOM'S CABIN."

THE ESCAPE.

Push - under & go - by
COMMUNICATING with the apartment of Mr. and Mrs. Shelby was a large closet, opening by a door into the outer passage. When Mrs. Shelby had dismissed Eliza for the night, her feverish and excited mind had suggested the idea of this closet, and she had hidden herself there, and, with her ear pressed close against the crack of the door, had lost not a word of the conversation.

creep When the voices died into silence, she rose and crept stealthily away. Pale, shivering, with rigid features and compressed lips, she looked an entirely altered being from the soft and timid creature she had been hitherto. She moved cautiously along the entry, paused one moment at her mistress' door, and raised her hands in mute appeal to Heaven, and then turned and glided into her own room. It was a quiet, neat apartment, on the same floor with her mistress'. There was the pleasant sunny window where she had often sat singing at her sewing; there was a little case of books, and various little fancy articles ranged by them, the gifts of Christmas holidays; there was her simple wardrobe in the closet and in the drawers;—here was, in short, her home, and, on the whole, a happy one it had been to her. But there, on the bed, lay her slumbering boy, his long curls falling negligently around his unconscious face, his rosy mouth half open, his little fat hands thrown out over the bed-clothes, and a smile spread like a sunbeam over his whole face.

"Poor boy! poor fellow!" said Eliza; "they have sold you! but your mother will save you yet!" •

No tear dropped over that pillow. In such straits as these the heart has no tears to give; it drops only blood, bleeding itself away in silence. She took a piece of paper and a pencil, and wrote hastily:—

"O missus! dear missus! don't think me ungrateful—don't think hard of me, any way. I heard all you and master said last

night. I am going to try to save my boy—you will not blame me. God bless and reward you for all your kindness!"

Hastily folding and directing this, she went to a drawer and made up a little package of clothing for her boy, which she tied with a handkerchief firmly round her waist; and so fond is a mother's remembrance, that, even in the terrors of that hour, she did not forget to put in the little package one or two of his favourite toys, reserving a gaily painted parrot to amuse him when she should be called on to awaken him. It was some trouble to arouse the little sleeper; but after some effort he sat up and was playing with his bird, while his mother was putting on her bonnet and shawl.

"Where are you going, mother?" said he, as she drew near the bed with his little coat and cap.

His mother drew near, and looked so earnestly into his eyes, that he at once divined that something unusual was the matter.

"Hush, Harry," she said; "mustn't speak loud, or they will hear us. A wicked man was coming to take little Harry away from his mother, and carry him 'way off in the dark; but mother won't let him—she's going to put on her little boy's cap and coat, and run off with him, so the ugly man can't catch him."

Saying these words, she had tied and buttoned on the child's simple outfit, and, taking him in her arms, she whispered to him to be very still; and, opening a door in her room which led into the outer veranda, she glided noiselessly out.

It was a sparkling, frosty, starlight night, and the mother wrapped the shawl closely round her child, as, perfectly quiet with

vague terror, he clung round her neck. . . . It is impossible to conceive of a human creature more wholly desolate and forlorn than Eliza, when she turned her footsteps from Uncle Tom's cabin.

Her husband's suffering and dangers, and the danger of her child, all blended in her mind, with a confused and stunning sense of the risk she was running, in leaving the only home she had ever known, and cutting loose from the protection of a friend whom she loved and revered. Then there was the parting from every

little hat

go away

slaying
dress

attended with just

near a rising from
something unknown
unexpected

lonely, forsaken
street

mingled together

separating
respects
away

familiar object,—the place where she had grown up, the trees under which she had played, the groves where she had walked ^{so often} many an evening in happier days, ^{by the side of} her young husband—everything, as it lay in the clear, frosty starlight, seemed to speak reproachfully to her, and ask her whither could she ^{go with a man who was} from a home like that? ^{ruining her security.}

But stronger than all was maternal love, (wrought into a par-^{grown into a}
oxysm of frenzy by the near approach of a fearful danger.) Her ^{convulsion - who}
boy was old enough to have walked by her side, and, in an ^{exultation} ~~in~~ ^{in a situation rather}
different case, she would only have led him by the hand; but now ^{good was had.}
the bare thought of putting him out of her arms made her shudder, ^{more to tremble}
and she strained him to her bosom with a convulsive grasp, ^{with her} as
^{draw with force}
she went rapidly forward. ^{possessing con-} ~~aloud.~~ ^{scious}

The frosty ground creaked beneath her feet, and she trembled at the sound; every quaking leaf and fluttering shadow sent the blood backward to her heart, and quickened her footsteps. She wondered within herself at the strength that seemed to be come upon her; for she felt the weight of her boy as if it had been a feather, and every flutter of fear, seemed to increase the supernatural power that bore her on, while from her pale lips burst forth, in frequent ejaculations, the prayer to a Friend above, "Lord, help; Lord, save me."

Lord, help; Lord, save me.

If it were your Harry, mother, or your Willie, that were going to be torn from you by a brutal trader to-morrow morning—if you had seen the man, and heard that the papers were signed and delivered, and you had only from twelve o'clock till morning to make good your escape—how fast could you walk? How many miles could you make in those few brief hours, with the darling at your bosom—the little sleepy head on your shoulder—the small soft arms trustingly holding on to your neck?

For the child slept. At first the novelty and alarm kept him ^{struggles} waking; but his mother so hurriedly repressed every breath or ^{stuffed} sound, and so assured him that if he were only still she would certainly save him, that he clung quietly round her neck, only asking, as he found himself sinking to sleep,— *you.*

"Mother, I don't need to keep awake, do I?"

"No, my darling; sleep, if you want to,"

"But, mother, if I do get asleep, you won't let him get me?"

"No! so may God help me!" said his mother, with a paler cheek, and a brighter light in her large dark eyes.

"You're sure, an't you, mother?"

surprise.
the voice of her mother
if we're speaking of it
"Yes, sure!" said the mother, in a voice that startled herself; for it seemed to her to come from a spirit within that was no part of her;—and the boy dropped his little weary head on her shoulder, and was soon asleep. How the touch of the child's warm arms, and his gentle breathing, seemed to add

earnestness
pouring
into her
electric streams
from every gentle touch and
movement of the sleeping, confiding child.
It seemed to her as if (strength
(sublime is the
dominion of the mind over the body, that for a time can make

body, in which
flesh and nerve
impregnable, and string the sinews like steel, so
that the weak become so mighty. . . .)

her first glance
was at the river, which lay, like Jordan, between her and the
(Canaan of liberty) on the other side.)
An hour before sunset, she entered a village by the Ohio river, weary and foot-sore, but still strong in heart. (Her first glance
was at the river, which lay, like Jordan, between her and the
(Canaan of liberty) on the other side.)

February
it was now
early spring, and the river was swollen and tur-
bulent; great cakes of floating ice were swinging heavily to and
fro in the turbid waters. Owing to the peculiar form of the shore
on the Kentucky side, the land bending far out into the water,
the ice had been lodged and detained in great quantities, and the
narrow channel which swept round the bend was full of it, piled
one cake over another, thus forming a (temporary barrier) to the
descending masses, which lodged and formed a great (undulating
raft) filling up the whole river, and extending almost to the Ken-
tucky shore.

(thinking)
Eliza stood for a moment contemplating this (unfavourable
aspect) of things, which she saw at once must prevent the usual
passage of the ferry-boat from running, and then turned into a small public-
house on the bank to make a few inquiries. . . .

"Take him into this room," said the hostess, opening into a small bed-room, where stood a comfortable bed. Eliza laid the

weary boy upon it, and held his hands in hers till he was fast ^{and} asleep. For her there was no rest. As a fire in her bones, the ^{whole burning} thoughts of the pursuer urged her on; and she gazed with longing ^{for} eyes on the sullen, surging waters, that lay between her and ^{rising} liberty. . . .

In consequence of all the various delays, it was about three-quarters of an hour after Eliza had laid her child to sleep in the village tavern that the pursuing party came riding into the same ^{time} place. Eliza was standing by the window, looking out in another ^{near} direction, when Sam's quick eye caught a glimpse of her. Haley ^{as usual. saw.} and Andy were two yards behind. At this crisis Sam contrived ^{to} to have his hat blown off, and uttered a loud and characteristic ^{keen exclamation} ejaculation, which startled her at once; she drew suddenly back, ^{at once}—the whole train swept by the window, round to the front door. ^{thence} (A thousand lives) seemed to be concentrated in that one moment ^{to} to Eliza.) Her room opened by a side door to the river. She ^{back} caught her child, and sprang down the steps towards it. The ^{trader} trader caught a glimpse of her, just as she was disappearing down the bank; and throwing himself from his horse, and calling loudly to Sam and Andy, he was after her like a hound after a deer. In that dizzy moment her feet scarcely seemed to touch the ^{confused} ground, and an instant brought her to the water's edge. Right on ^{directly} behind they came; and, nerved with strength such as God gives ^{supplies} only to the desperate, with one wild cry and flying leap, she ^{leapt} vaulted sheer over the turbid current by the shore, on to the raft ^{indicating} of ice beyond! It was a desperate leap—impossible to anything but madness and despair; and Haley, Sam, and Andy instinctively ^{jumped} cried out, and lifted up their hands, as she did it.

The huge green fragment of ice on which she alighted pitched ^{downward} and creaked as her weight came on it, but she stayed there not a moment. With wild cries and desperate energy she leaped to another and still another cake,—stumbling—leaping—slipping—^{striking the ice} springing upwards again! Her shoes are gone—her stockings ^{gone} out from her feet—while blood marked every step; but she saw ^{nothing} nothing, felt nothing, till dimly, as in a dream, she saw the Ohio ^{indistinctly} side, and a man helping her up the bank.

SCENES FROM "UNCLE TOM'S CABIN."

TOPSY.

One morning, while Miss Ophelia was busy with some of her domestic duties, St. Clare's voice was heard calling her at the foot of the stairs.

"Come down here, cousin; I've something to show you."

"What is it?" said Miss Ophelia, coming down with her sewing in her hand.

"I've made a purchase for your department. See here," said St. Clare; and, with the word, he pulled along a little negro girl, about eight or nine years of age.

She was one of the blackest of her race, and her round, shining eyes, glittering like glass beads, moved with quick and restless glances over everything in the room. Her mouth, half open with astonishment at the wonders of the new mas'r's parlour, displayed a white and brilliant set of teeth. Her woolly hair was braided

in sundry little tails, which stuck out in every direction. The expression of her face was an odd mixture of shrewdness and cunning, over which was (oddly drawn,) like a kind of veil, an

expression of the most doleful gravity and solemnity. She was dressed in a ragged garment, made of bagging; and stood with her hands demurely folded before her. Altogether, there was something odd and goblin-like about her appearance,—something,

as Miss Ophelia afterwards said, "so heathenish," as to inspire that good lady with utter dismay; and, turning to St. Clare, she said,—

"Augustine, what can you have brought that thing here for?"

"For you to educate, to be sure. I thought she was rather a funny specimen. Here, Topsy," he added, giving a whistle, as a man would to call the attention of a dog, "give us a song now, and show us some of your dancing."

The black, glassy eyes glittered with a kind of wicked drollery, and Topsy struck up, in a clear, shrill voice, an odd negro melody, to which she kept time with her hands and feet, spinning round, clapping her hands, knocking her knees together, in a

32

wild, fantastic sort of time, and producing in her throat all those ^{colossal} odd guttural sounds which distinguish the native music of her ^{the chief peculiarity of her} race; finally, turning a somerset or two, and giving a prolonged ^{at last, continuing} closing note, as odd and unearthly as that of a steam-whistle, she ^{came suddenly} came suddenly down on the carpet, and stood with her hands folded, and an expression of meekness and solemnity over her face, only broken by the cunning glances which she shot askance ^{as if to} from the corners of her eyes.

Miss Ophelia stood silent, perfectly paralyzed with amazement.

St. Clare, like a mischievous fellow as he was, appeared to enjoy ^{playful} her astonishment; and, addressing the child again, said,—

"Topsy, this is your new mistress. I'm going to give you ^{up} ^{comest} ^{proper} to her; see, now, that you behave yourself."

"Yes, mas'r," said Topsy, with a perfect gravity, her wicked ^{shining} eyes twinkling as she spoke.

"You're going to be good, Topsy, remember," said St. Clare.

"O yes, mas'r," said Topsy with another twinkle, her hands still devoutly folded.

"Now, Augustine, what is this for?" said Miss Ophelia.

"Your house is so full of these little plagues, now, that one ^{Pesto} can't set foot down without treading on them. I get up in the morning, and find one asleep behind the door, and see one black head poking out from under the table, one lying on the ^{the} door-mat; and they are moping, and mowing, and grinning between ^{at} all the railings, and tumbling over the kitchen floor! Why did you bring this one?" ^{nothing about one.}

"For you to educate, didn't I tell you? You're always preach-^{ing} about educating. I thought I would make you a present of a fresh-caught specimen, and let you try your hand on her.) The ^{savage} fact is, this creature belonged to a place that I have to pass by every day, and I was tired of hearing her screaming, and the ^{making noise} people she belonged to beating and swearing at her. She looked ^{crazy} bright and funny, too, as if something might be made of her; so ^{commical} I bought her, and I'll give her to you. Try, now, and see what you'll make of her. You know I haven't any gift that way, but I'd like you to try."

cooking place
take in hand
superintend
cully, unwillingly
Miss Ophelia carried Topsy to the kitchen regions, but she soon saw there was nobody that would undertake to oversee the cleansing and dressing of the new arrival; and so she was forced to do it herself, with some very ungracious and reluctant assistance from Jane.

dress, act, suitable
complete, neat
pleasure
curls
to make ready
When arrayed at last in a suit of decent and whole clothing, and her hair cropped short, Miss Ophelia, with some satisfaction, said she looked more Christian-like than formerly, and in her own mind began to mature some plans for her instruction. *STT*

Sitting down before her, she began to question her.

"How old are you, Topsy?"

sort face
"Dunno, missus," said the image, with a grin that showed all her teeth. *looked like a dog (used in contempt)*

"Don't you know how old you are? Did nobody ever tell you? Who was your mother?"

any mother
"Never had none!" said the child, with another grin.

"Never had any mother? What do you mean? Where were you born?"

continues
time, imagine
dark
ghost, country
ghost, severity
"Never was born!" persisted Topsy, with another grin, that looked so goblin-like, that, if Miss Ophelia had been (at all nervous, she might have fancied that she had got hold of some sooty gnome from the land of spirits); but Miss Ophelia was not nervous, but plain and business-like, and she said, with some sternness,—

"You mustn't answer me in that way, child; I'm not playing with you. Tell me where you were born, and who your father and mother were."

repeated
any
care, B
"Never was born," reiterated the creature, more emphatically — "never had no father nor mother, nor nothin'. Old Aunt Sue used to take care on us."

The child was evidently sincere; and Jane, (breaking into a short laugh, said,—

laughing
is, then, plain
"Yes, missus, there's heaps of 'em. Speculators buys 'em up cheap, when they's little, and gets 'em sent to market."

"How long have you lived with your master and mistress?"

"Dunno, missus."

"Is it a year, or more, or less?"

adjust pillows more accurately, sweep, and dust, and arrange more perfectly, than Topsy, when she chose—but she didn't very often choose. If Miss Ophelia, after three or four days of careful and patient supervision, was so sanguine as to suppose that Topsy had at last fallen into her way, could do without overlooking, and so go off and busy herself about something else, (Topsy would hold a perfect carnival of confusion for some one or two hours. Instead of making the bed, she would amuse herself with pulling off the pillow-cases, butting her woolly head among the pillows, till it would sometimes be grotesquely ornamented with feathers sticking out in various directions; she would climb the posts, and hang her head downward from the tops; flourish the sheets and coverlets all over the apartment; dress the bolster up in Miss Ophelia's night-clothes, and enact various scenic performances with that—singing, and whistling, and making grimaces at herself in the looking-glass; in short, as Miss Ophelia phrased it, "raising Cain" generally.)

On one occasion, Miss Ophelia found Topsy with her very best scarlet India shawl wound round her head for a turban, going on with her rehearsals before the glass in great style—Miss Ophelia having, with carelessness (most unheard of in her,) left the key for once in her drawer. *quit now.*

"Topsy!" she would say, when (at the end of all patience,) "what does make you act so?"

"Dunno, missus—I 'spects 'cause I's so wicked!"

"I don't know what I should do with you, Topsy."

"Oh, missus, you must whip me; my old missus allers whipped me. I an't used to workin' unless I gets whipped."

"Why, Topsy, I don't want to whip you. You can do well, if you've a mind to; what is the reason you won't?"

"Oh, missus, I's used to whippin'; I 'spects it's good for me."

Miss Ophelia tried the recipe, and Topsy invariably made a terrible commotion, screaming, groaning, and imploring; though, half an hour afterwards, when roosted on some projection of the balcony, and surrounded by a flock of "young uns," she would express the utmost contempt of the whole affair. *whipping.*

George sat fixed with solemn awe. It seemed to him that the place was holy; and as he closed the lifeless eyes, and rose up from the dead, only one thought possessed him—that expressed by his simple old friend, "What a thing it is to be a Christian!"

He turned. Legree was standing sullenly behind him.

Something in that dying scene had checked the natural fierceness of youthful passion. The presence of the man was simply loathsome to George; and he felt only an impulse to get away from him with as few words as possible.

Fixing his keen, dark eyes on Legree, he simply said, pointing to the dead, "You have got all you ever can of him. What shall I pay you for the body? I will take it away, and bury it decently."

"I don't sell dead niggers," said Legree, doggedly; "you are welcome to bury him where and when you like."

"Boys," said George, in an authoritative tone, to two or three negroes who were looking at the body, "help me to lift him up and carry him to my waggon; and get me a spade."

One of them ran for a spade; the other two assisted George to carry the body to the waggon.

George neither spoke to nor looked at Legree, who did not countenance his orders, but stood whistling with an air of forced unconcern. He sulkily followed them to where the waggon stood at the door.

George spread his cloak in the waggon, and had the body carefully disposed of in it,—moving the seat, so as to give it room. Then he turned, fixed his eyes on Legree, and said, with forced composure,—

"I have not as yet said to you what I think of this most atrocious affair;—this is not the time and place. But, sir, this innocent blood must have justice. I will proclaim this murder.

I will go to the very first magistrate, and expose you."

"Do!" said Legree, snapping his fingers scornfully. "I will like to see you doing it. Where are you going to get witnesses?—how are you going to prove it? Come, now!"

George saw at once the force of this defiance. There was not a white person in the place; and, in all southern courts, the testimony of coloured blood is nothing. He felt at that moment as if he could have rent the heavens with his heart's indignant cry for justice.

Beyond the boundaries of the plantation George had noticed a ^{fine} dry, sandy knoll, shaded by a few trees; there they made the ^{most} grave.

"Shall we take off the cloak, mas'r?" said the negroes, when the grave was ready.

"No, no; bury it with him.—It's all I can give you now, poor Tom, and you shall have it."

They laid him in; and the men shovelled away silently. They ^{filled up the} banked it up, and laid green turf over it.

"You may go, boys," said George, slipping a piece of silver into the hand of each. They lingered about, however. ^{remained there}

"If young mas'r would please buy us," said one.

"We'd serve him so faithful!" said the other.

"Hard times here, mas'r?" said the first. "Do, mas'r, buy us, please!" ^{we are very cruelly treated here.}

"I can't—I can't," said George, with difficulty, motioning them off; "it's impossible!"

The poor fellows looked dejected, and walked off in silence. ^{disheartened}

"Witness, eternal God," said George, kneeling on the grave of his poor friend—"oh! witness, that, from this hour, I will do ^{what singly} ^(one man can) to drive out this curse of slavery from my land!" ^{no man can}

There is no monument to mark the last resting-place of Uncle Tom.

He needs none. His Lord knows where he lies, and will raise him up immortal, to appear with Him ^{when he shall appear in his glory}.

Pity him not! Such a life and death is not for pity. (Not in the riches of omnipotence is the chief glory of God; but in self-denying, ^{quality} ^{denying} ^(suffering love.) And blessed are the men whom he calls ^{to himself} to fellowship with him, ^{bearing their cross after him} with patience. ^{for his sake} Of such it is written, "Blessed are they that mourn, for they shall be comforted."

MRS. H. B. STOWE.

SLAVE SINGING AT MIDNIGHT.

[The following touching piece represents a negro slave singing the Psalms of David at ^{effectively} midnight.]

Low he sang the Psalms of David! he ^(a negro and enslaved) ^{truly, any} ^{slave} Sang of Israel's victory,—sang of Zion, bright and free. ^{Jerusalem} ^{happy}

adverb.

In that hour when night is calmest, sang he from the Hebrew
Psalmist, *psalms of David*.

In a voice so sweet and clear that (I could not choose but hear,—)
(Songs of triumph and ascriptions) such as reached the swart *show to*
Egyptians,

When upon the Red Sea coast perished Pharaoh and his host. *king.*

And the voice of his devotion filled my soul with strange emotion; *author*
For its tones by turns were glad, (sweetly solemn, wildly sad.)

Paul and Silas, in their prison, sang of Christ (the Lord arisen; *resurrection*

And an earthquake's arm of might broke their dungeon-gates at night. *but pleasing.*

(But, alas! what holy angel brings the slave this glad evangel?

And what earthquake's arm of might breaks his dungeon-gates at
night?) *35*

LONGFELLOW.

SLAVERY, from *Lumi Poet*.

I would not have a slave to till my ground,

To carry me, to fan me while I sleep,

And tremble when I wake, (for all the wealth)

(That sinews bought and sold, have ever earned,) *36*

No! dear as freedom is, and (in my heart's

Just estimation) prized above all price,

I had much rather be myself the slave,

And wear the bonds, than fasten them on him.

We have no slaves at home—then why abroad?

And they themselves, once ferried o'er the wave *37*

That parts us, are emancipate and loosed. *37*

Slaves cannot breathe in England; (if their lungs *atlantic ocean*

Receive our air, that moment they are free;—

They touch our country, and their shackles fall!

That's noble, and bespeaks a nation proud

And jealous of the blessing. Spread it, then,

And let it circulate through every vein in the body of peoples }

Of all your empire; that, where Britain's power

Is felt, mankind may feel her mercy too.

COWPER.

THE HUMMING-BIRD.

THE humming-birds, of which more than a hundred species are known to exist, are wholly confined to the American continent and the adjacent islands. They are the smallest of the feathered ^{creatures} ~~birds~~ race, some species being exceeded in size and weight by several ^{species} ~~of the~~ insect tribes. Only three or four species are found within the limits of the United States; but they abound in the tropical forests of South America, where they excite the admiration of all who observe them, by their delicate form and the (dazzling splendour) of their plumage. Humming-birds were long supposed to feed only upon the honey or sweet juices of flowers, but recent observations have proved that they feed upon insects also. The nests of the several species vary greatly in form and structure, but in all they are made of the softest, warmest, and most delicate materials.

"No sooner has the returning sun again introduced the vernal season, and caused millions of plants to expand their leaves and blossoms to his genial beams, than the little humming-bird is seen advancing on fairy wings, carefully visiting every opening flower-cup, and, like a curious florist, removing from each the injurious insects, that would otherwise, ere long, cause their beautiful petals to droop and decay. Poised in the air, it is observed peeping cautiously, and with sparkling eye into their innermost recesses; whilst the ethereal motions of its pinions, so rapid and so light, seem to fan and cool the flower, without injuring its fragile texture, and produce a delightful murmuring sound, well adapted for lulling the insects to repose. Then is the moment for the humming-bird to secure them. ^{get}

"The prairies, the fields, the orchards and gardens—nay, the deepest shades of the forest, are all visited in their turn; and everywhere the little bird meets with pleasure and with food. Its throat in beauty and brilliancy baffles all competition. Now it glows with a fiery hue, and again it is changed into a velvety black. The upper parts of its delicate body are of resplendent

very joyful changing green; and it darts through the air with a swiftness and
happiness vivacity hardly conceivable. It moves from one flower to another
in minutes like a gleam of light. (Humming-birds follow the course of the
day sun, advancing and retiring with him; and, flying on the wings of
desire the zephyrs, rejoice in eternal spring,) *remain happy in a spring season*
with birds "Could you cast a momentary glance on the nest of the hum-
ing-bird ming-bird, and see, as I have seen, the newly-hatched pair of
young young, not much larger than humble-bees, naked, blind, and so
feeble feeble as scarcely to be able to raise their little bills to receive
of anxiety and fear food from their parents; and could you see those parents, full
of anxiety and fear of anxiety and fear, passing and repassing within a few inches of
your face your face, alighting on a twig not more than a yard from you,
and (waiting the result of your unwelcome visit) and (waiting the result of your unwelcome visit) in a state of
despair despair—you could not fail to be interested in such a display of
parental affection parental affection. Then how pleasing it is, on leaving the spot,
to see the returning joy of the parents to see the returning joy of the parents, when, after examining the
nest, they find their nurslings untouched!"—Audubon.

among birds The humming noise, from which this bird's name is derived, is
due simply to the rapidity of the vibrations of its wings. *moderate*
loud enough to be heard Sound is produced by the rapid vibration of any substance in
contact with the air contact with the air. If the vibrations are slow, no audible sound
is produced is produced;—thus the moving of the pendulum of a clock, the
wagging of the tail of a dog wagging of the tail of a dog, the passing of the hand up and
down in the air down in the air, produce no sound. If, however, we greatly in-
crease the rapidity of the vibrations crease the rapidity of the vibrations, we at last come to a point
where sound begins to be heard where sound begins to be heard. This is about thirty-two beats
in a second in a second. The humming-bird's wings, therefore, must make
more than thirty-two beats in a second more than thirty-two beats in a second; and it is simply in
consequence of this that the humming sound is produced consequence of this that the humming sound is produced. The
wings of a swallow, on the other hand, (fall short of this number.) wings of a swallow, on the other hand, (fall short of this number.)
and thus that bird moves through the air silently. and thus that bird moves through the air silently.

do not make 32 beats in a second.

THE COTTON PLANT.

Of the four raw materials which supply clothing, *flax* is said to have belonged originally to Egypt; the sheep, which furnishes *wool*, to the mountain ranges of Asia; the *silk*-worm to China; and the *cotton* plant to India and America.

Although cotton was not generally known among the nations of the earth until a much later period than the other substances, it is now raised in such abundance as to be the cheapest of all *clothes*. From its great resemblance to sheep's wool, it was called by the ancients "the wool of trees;" and although it differs greatly from the animal fleece, the term is still retained. The Germans call it tree-wool; and the French give it a name which answers to the English term cotton wool, *which is equal to*

The many varieties of the cotton plant have been divided into *herb* cotton, *shrub* cotton, and *tree* cotton, according to the mode of growth. Of these the most useful is the *herb* cotton, which is extensively cultivated in the southern parts of the United States of America, in India, China, and other warm climates. The most esteemed variety of the herb cotton is that known by the name of *sea-island* cotton; which is of *long staple*, its fibre being much longer than that of any other description, and of a fine silky texture. It is an annual plant, and being found to thrive in the low sandy islands which lie along the coast from Charleston to Savannah, the cotton hence derives its name.

Herb cotton attains a height of from eighteen to twenty-four inches. Its leaves are of a dark green colour. The blossom expands into a pale yellow flower, which falling off, a pointed triangular pod appears. This gradually increases to the size of a large filbert, and becomes brown as the woolly fruit ripens. The expansion of the wool then causes the pod to burst, when there appears a ball of snowy white or yellowish down adhering to the seeds. The appearance of a cotton-field while the pods are progressively opening is highly interesting, the fine dark green of the leaf contrasting beautifully with the brilliant white of the

has greatly
cotton suspended from the pods, and floating to and fro at the bidding of the wind; *as the wind blows.*

sp. perennial
Shrub cotton grows in most countries where the annual herb cotton is found. In the West Indies, its duration is about two or three years; in India, Egypt, and some other places, it lasts from six to ten years. In the hottest countries it is perennial, and furnishes two crops a year. In cooler climates it is annual. In appearance it is much like a currant-bush. *77 77 77*

inland part
Tree cotton grows in India, China, Egypt, and in the interior and on the western coast of Africa, and in some parts of America. It attains a height of from twelve to twenty feet.

apart -
germinate
Great care is bestowed in America upon the cultivation of the cotton plant. The seed is sown by hand in March, April, or May, according to the season. It is planted in rows five feet asunder, and in holes eighteen inches apart, in each of which several seeds are placed. As the plants come up, the weakest are drawn out, only two or three being left in each hole.

until or even
result
Good cotton cannot be produced without constant care and attention, up to the time of flowering. In India, the mode of cultivation is very slovenly, and little or no care is bestowed on the plant; the consequence of which is, that the produce is greatly inferior to that of the United States.

chiefly
quite without
earth
flaming
high ground
The operation of gathering the cotton requires much care. The gatherers, consisting chiefly of women and young people, go into the field with baskets or bags suspended from their shoulders for the reception of such portions of the wool as they find sufficiently ripe. The usual method is to take away the seeds and cotton, leaving the empty husks. The gathering is always performed in fine weather, after the morning dew has disappeared, as any moisture would make the cotton mouldy, and cause the oil of the seed to spread over the wool. The cotton is more completely dried by exposure during several days to the heat of the sun or of stoves, on (a platform of tiles) or wood, whereby the seeds are afterwards more easily separated. As the cotton does not all ripen at the same time, the gatherers have to go over the same plantation many times. If it is not gathered soon after the pods

have burst, the heat of the sun injures its colour, or it may be blown away by the wind, or spoiled by the rain or dew. *dis troyed*

The progress of the cotton manufacture in this country is one of the marvels of the age; and the vast amount of capital and labour now employed in it leads us naturally to rank the cotton plant among the most valuable and important vegetable substances with which the earth is bountifully furnished. To appreciate in some degree its importance to this country, it is only necessary to bear in mind that the declared value of our exports in cotton goods amounted in 1849 to nearly twenty-seven millions of pounds sterling, while the quantity retained for home consumption was supposed to exceed ten millions. This is a great contrast to the state of things in 1760, when the total value of all the cotton goods manufactured in Great Britain was only about two hundred thousand pounds. At that period, and for thirty years afterwards, North America did not supply us with a single bale of cotton; and there seemed very little prospect of our being in a condition to produce cotton goods that might compete with the fabrics of China and Hindustan, which had long been celebrated for their lightness and delicacy. That we should receive raw cotton from the East Indies, and return it to that country manufactured more dexterously than the celebrated native fabrics, would naturally have been looked upon by us and by the Hindus as an impossibility. Yet, thanks to British skill and industry, and to the practical/spirit of inquiry which resulted in the invention of the steam-engine and of the spinning-jenny, we are now in a condition not only to do this, but to import cotton largely from other quarters, and to surpass the whole world in the extent, beauty, and variety of our manufactures in that material. Of this all the nations of the earth are witnesses, for there is scarcely any part of the globe to which our commerce has not penetrated, and to which our printed cotton goods have not been conveyed. In the factories of Manchester provision is made for the wants of the inhabitants of various climates, and for races uncivilized as well as civilized. The cotton dress of the African chief, or of the Chinese citizen, is there supplied, in common with the working *equally*

dressings of our mechanics and their families, or the delicate muslin robes of royalty.

(Thus cotton brings distant regions of the world into communication; it widens the circle of human enterprise and knowledge; it rubs off some of the rust of national prejudice;) it creates towns, and increases tenfold the population of those already created. 39

The little seed-pod of the cotton plant has made Manchester one of the wonders of the nineteenth century, and extended the commerce of Great Britain to nearly every region of the habitable globe.

On the discovery of America, the cotton manufacture was found to be in an advanced state in that country. Cortez sent presents to Charles V. of mantles of various colours, waistcoats, handkerchiefs, counterpanes, tapestries, and carpets, all of cotton. The rest of Europe received from Spain the cotton manufacture. The plant was grown at Valencia, and an extensive manufactory for sail-cloth and fustian was set up at Barcelona.

More than four-fifths of the cotton at present brought into Great Britain is from the southern part of the United States of America, where the cultivation of the plant is carried on to such an extent that it has been reckoned that the labourers and helpers, together with owners, overseers, and their families, dependent on the crop, amount to a million of persons.

The cotton now produced in the United States exceeds the production of the whole world in 1770; and this is to be attributed in some degree to the good quality of American cotton, the low price of land, and the improvements introduced into the various processes, but more especially, perhaps, to the energy of the American planters, and the enterprising character of the nation. *W. to ...*

THE SLAVE'S DREAM.

BESIDE the ungathered rice he lay, his sickle in his hand ;
 His breast was bare, his matted hair was buried in the sand ;
 Again, in the mist and shadow of sleep, he saw his native land.

Wide through the landscape of his dreams the lordly Niger flowed ;
 Beneath the palm-trees on the plain once more a king he strode,
 And heard the tinkling caravans descend the mountain-road ;

He saw once more his dark-eyed queen among her children stand ;
 They clasped his neck, they kissed his cheeks, they held him by
 the hand !—

A tear burst from the sleeper's lids, and fell into the sand.

And then at furious speed he rode along the Niger's bank ;

His bridle-reins were golden chains, and, with a martial clank,

(At each leap he could feel his scabbard of steel smiting his stal-
 lion's flank.)

Before him, like a blood-red flag, the bright flamingoes flew ;
 From morn till night he followed their flight, o'er plains where
 the tamarind grew,

Till he saw the roof of Caffre huts, and the ocean rose to view.

At night he heard the lion roar, and the hyena scream,

And the river-horse, as he crushed the reeds beside some hidden
 stream ;

And it passed, like a glorious roll of drums, through the triumph
 of his dream.

The forests, with their myriad tongues, shouted of liberty ;

And the blast of the desert cried aloud, with a voice so wild and free,

That he started in his sleep and smiled at their tempestuous glee.

(He did not feel the driver's whip, nor the burning heat of day ;

For death had illumined the land of sleep, and his lifeless body lay

(A worn-out fetter, that the soul had broken and thrown away.)

LONGFELLOW.

THE PRAIRIES.

BETWEEN the Mississippi and the Rocky Mountains there is a vast extent of country, consisting of boundless plains of grass, called *Prairies*. The soil is very fertile, and the grass grows high; and when, from any small elevation, the traveller surveys the scene, and sees the grass waving in the wind throughout the whole expanse around him, he may well imagine himself in the midst of an ocean, only that the billows that roll over it are green instead of blue. These plains furnish food for countless thousands of buffaloes, elks, antelopes, and other animals that feed on herbage, the whole mass moving continually to and fro over the vast expanse as the seasons change and the state of the pasturage invites them to new fields.

Though they present a general level with respect to the whole country, the prairies are yet in themselves not flat, but exhibit a graceful waving surface, swelling and sinking with an easy slope, and a full, rounded outline. Hence, in the expressive language of the country, they are spoken of as the *rolling* prairies, the surface being said to resemble the long heavy swell of the ocean when its waves are subsiding to rest after the agitation of a storm.

The attraction of the prairie consists in its extent, its carpet of verdure and flowers, its undulating surface, its groves, and the fringe of timber by which it is surrounded. Of all these, the last is the most expressive feature; it is that which gives character to the landscape, which imparts the shape and marks the boundary of the plain. If the prairie be small, its greatest beauty consists in the vicinity of the surrounding margin of woodland, which resembles the shore of a lake indented with deep vistas like bays and inlets, and throwing out long points like capes and headlands; while occasionally these points approach so closely on either hand, that the traveller passes through a narrow avenue or strait, where the shadows of the woodland fall upon his path, and then emerges again into another prairie. Where the plain is large, (the forest outline is seen in the far perspective,) like the dim shore

when beheld at a distance from the ocean. The eye sometimes roams over the green meadow without discovering a tree, a shrub, or any object in the immense expanse but the wilderness of grass and flowers; while at another time the prospect is enlivened by groves, which are seen interspersed like islands, or by a solitary tree which stands alone in the blooming desert.

44 "These are the gardens of the desert; these
 The unshorn fields, boundless and beautiful,
 For which the speech of England has no name—
 The Prairies. . . . Lo! they stretch
 In airy undulations far away,
 As if the Ocean, in his gentlest swell,
 Stood still, with all his rounded billows fixed
 And motionless for ever. Motionless?
 No—they are all unchained again. The clouds
 Sweep over with their shadows, and, beneath,
 The surface rolls and fluctuates to the eye;
 Dark hollows seem to glide along and chase
 The sunny ridges. Breezes of the south!
 Who toss the golden and the flame-like flowers,
 And pass the prairie-hawk, that, poised on high,
 Flaps his broad wings, yet moves not—ye have played
 Among the palms of Mexico and vines
 Of Texas, and have crisped the limpid brooks
 That from the fountains of Sonora glide
 Into the calm Pacific—have ye fanned
 A nobler or a lovelier scene than this?
 Man hath no part in all this glorious work:
 The Hand that built the firmament hath heaved
 And smoothed these verdant swells, and sown their slopes
 With herbage, planted them with island groves,
 And hedged them round with forests. (Fitting floor
 For this magnificent temple of the sky—
 With flowers whose glory and whose multitude
 Rival the constellations! The great heavens)

groups of trees
 resembling an
 island.

surpass

Seem to stoop down upon the scene in love—
 A nearer vault, and of a tenderer blue,
 Than that which bends above the eastern hills.
 As o'er the verdant waste I guide my steed,
 Among the high rank grass that sweeps his sides,
 The hollow beating of his footsteps seems
 A sacrilegious sound."

BRYANT.

THE PRAIRIE ON FIRE.

These who by plain
 The sleep of the fugitives lasted for several hours. (The trapper *46*
 was the first to shake off its influence, as he had been the last to
 court its refreshment.) Rising just as the gray light of day
 began to brighten that portion of the studded vault which rested
 on the eastern margin of the plain, he summoned his companions
 from their warm lairs, and pointed out the necessity of their being
 once more on the alert. *at all times careful*

"See, Middleton!" exclaimed Inez, in a sudden burst of youth-
 ful pleasure, that caused her for a moment to forget her situation,
 "how lovely is that sky; surely it contains a promise of happier
 times!"

and bright
 "It is glorious!" returned her husband. "Glorious and
 heavenly is that streak of vivid red; and here is a still brighter
 crimson. Rarely have I seen a richer rising of the sun."

and bright
 "Rising of the sun!" slowly repeated the old man, lifting his
 tall person from its seat with a deliberate and abstracted air,
 while he kept his eye rivetted on the changing and certainly beauti-
 ful tints that were garnishing the vault of heaven. "Rising of the
 sun!—I like not such risings of the sun. Ah's me! the Indians
 have circumvented us. The prairie is on fire!"

Oh, dreadful!
 "Oh, dreadful!" cried Middleton, catching Inez to his bosom,
 under the instant impression of the imminence of their danger.
 "There is no time to lose, old man; each instant is a day. Let
 us fly!" *There is no time to lose, old man; each instant is a day. Let us fly!*

"Whither?" demanded the trapper, motioning him, with calm-

ness and dignity, to arrest his steps. "In this wilderness of grass and reeds, we are like a vessel in the broad lakes without a compass. A single step on the wrong course might prove the destruction of us all. It is seldom danger is so pressing that there is not time enough for reason to do its work, young officer; therefore let us await its biddings."

"For my part," said Paul Hover, looking about him with an unequivocal expression of concern, "I acknowledge, that should this dry bed of weeds get fairly in a flame, a bee would have to make a flight higher than common, to prevent his wings from being scorched. Therefore, old trapper, I agree with the captain, and say, Mount and run!"

"Ye are wrong—ye are wrong;—man is not a beast, to follow the gift of instinct, and to snuff up his knowledge by a taint in the air or a rumbling in the ground;) but he must see, and reason, and then conclude. So, follow me a little to the left, where there is a rising in the ground whence we may make our reconnoitings."

The old man waved his hand with authority, and led the way, without further par lance, to the spot he had indicated, followed by the whole of his alarmed companions. An eye less practised than that of the trapper might have failed in discovering the gentle elevation to which he alluded, and which looked on the surface of the meadow like a growth a little taller than common.

When they reached the place, however, the stunted grass itself announced the absence of that moisture which had fed the rank weeds of most of the plain, and furnished a clue to the evidence by which he had judged of the formation of the ground hidden beneath. Here a few minutes were lost in breaking down the tops of the surrounding herbage—which, notwithstanding the advantage of their position, rose even above the heads of Middleton and Paul—and in obtaining a look-out that might command a view of the surrounding sea of fire.

The examination which his companions so instantly and so intently made, rather served to assure them of their desperate situation than to appease their fears. Huge columns of smoke

were rolling up from the plain, and thickening in gloomy masses around the horizon. The red glow which gleamed upon their enormous folds, now lighting their volumes with the glare of the conflagration, now flashed to another point, as the flame beneath glided ahead, leaving all behind enveloped in awful darkness, and proclaiming louder than words the character of the imminent and rapidly approaching danger.

"This is terrible!" exclaimed Middleton, folding the trembling Inez to his heart. "At such a time as this, and in such a manner!"

"The gates of heaven are open to all who truly believe," murmured the gentle wife.

"This resignation is maddening! But we are men, and will make a struggle for our lives! How now, my brave and spirited friend;—shall we yet mount and push across the flames, or shall we stand here, and see those we most love perish in this frightful manner without an effort?"

"I am for a swarming time and a flight before the hive is too hot to hold us," said the bee hunter, to whom it will be at once seen that the half-distracted Middleton had addressed himself. "Come, old trapper, you must acknowledge this is but a slow way of getting out of danger. If we tarry here much longer, it will be in the fashion that the bees lie around the straw after the hive has been smoked for its honey. You may hear the fire begin to roar already; and I know by experience that when the flame once gets fairly into the prairie grass, he is no sloth that can outrun it."

"Think you," returned the old man, pointing scornfully at the mazes of the dry and matted grass which environed them, "that mortal feet can outstrip the speed of fire on such a path?"

"What say you, friend, doctor?" cried the bewildered Paul, turning to the naturalist with that sort of helplessness with which the strong are often apt to seek aid of the weak, when human power is baffled by the hand of a mightier Being;—"what say you? Have you no advice to give away in a case of life and death?"

The naturalist stood, tablets in hands, looking at the awful

spectacle with as much composure as though the conflagration had been lighted in order to solve the difficulties of some scientific problem. Aroused by the question of his companion, he turned to his equally calm though differently occupied associate, the trapper, demanding, with the most provoking insensibility to the urgent nature of their situation—"Venerable hunter, you have often witnessed similar prismatic experiments—"

He was rudely interrupted by Paul, who struck the tablets from his hands with a violence that betrayed the utter intellectual confusion which had upset the equanimity of his mind. Before time had been allowed for remonstrance, the old man, who had continued during the whole scene like one much at a loss how to proceed, though, also, like one who was rather perplexed than alarmed, suddenly assumed a decided air, as if he no longer doubted as to the course it was most advisable to pursue.

"It is time to be doing," he said, interrupting the controversy that was about to ensue between the naturalist and the bee hunter; "it is time to leave off books and moanings, and to be doing."

"You have come to your recollection too late, miserable old man!" cried Middleton; "the flames are within a quarter of a mile of us, and the wind is bringing them down in this direction with dreadful rapidity."

"Anan! the flames! I care but little for the flames! If I only knew how to circumvent the cunning of the Tetons as I know how to cheat the fire of its prey, there would be nothing needed but thanks to the Lord for our deliverance.) Do you call this a fire? If you had seen what I have witnessed in the eastern hills, when mighty mountains were like the furnace of a smith, you would have known what it was to fear the flames, and to be thankful that you were spared. Come, lads, come; 'tis time to be doing now, and to cease talking, for yonder curling flame is truly coming on like a trotting moose. Put hands upon this short and withered grass where we stand, and lay bare the 'arth.'"

"Would you think to deprive the fire of its victims in this childish manner?" exclaimed Middleton.

A faint but solemn smile passed over the features of the old man, as he answered, "Your grandfather would have said, that when the enemy was nigh, a soldier could do no better than to obey."

The captain felt the reproof, and instantly began to imitate the industry of Paul, who was tearing the decayed herbage from the ground in a sort of desperate compliance with the trapper's direction. Even Ellen lent her hands to the labour; nor was it long before Inez was seen similarly employed, though none among them knew why or wherefore. When life is thought to be the reward of labour, men are wont to be industrious. A very few moments sufficed to lay bare a spot of some twenty feet in diameter.

To one side of this little area the trapper brought the females, directing Middleton and Paul to cover their light and inflammable dresses with the blankets of the party. Then the old man approached the opposite side of the grass, which still environed them in a tall and dangerous circle, and selecting a handful of the driest of the herbage, he placed it over the pan of his rifle. The light combustible kindled at the flash. Then he placed the little flame into a bed of the standing fog, and, withdrawing from the spot to the centre of the ring, he patiently awaited the result.

The subtle element (seized with avidity upon) its new fuel, and in a moment forked flames were gliding among the grass, as the tongues of ruminating animals are seen rolling among their food, apparently in quest of its sweetest portions.

"Now," said the old man, holding up a finger, and laughing in his peculiarly silent manner, "you shall see fire fight fire. Ah's me! (many is the time I have burned a path from wanton laziness to pick my way across a tangled bottom.) But is this not fatal?" cried the amazed Middleton; "are you not bringing the enemy nigher to us, instead of avoiding it?"

("Do you scorch so easily?") Your grandfather had a tougher skin. But we shall live to see,—we shall all live to see."

The experience of the trapper was in the right. As the fire gained strength and heat, it began to spread on three sides, dying

of itself on the fourth for want of aliment. As it increased, and the sullen roaring announced its power, it cleared everything before it, leaving the black and smoking soil far more naked than if the scythe had swept the place. The situation of the fugitives would have still been hazardous, had not the area enlarged as the flame encircled them. But, by advancing to the spot where the trapper had kindled the grass, they avoided the heat; and in a very few moments the flames began to recede in every direction, leaving them enveloped in a cloud of smoke, but perfectly safe from the torrent of fire that was still furiously rolling onward.

The others regarded the simple expedient of the trapper with ^{astonishment} ~~wonder~~ that species of wonder with which the courtiers of Ferdinand are ^{often} ~~also~~ said to have viewed the manner in which Columbus made his egg to stand on its end, — though with feelings that were filled with gratitude instead of envy. ^{called the Catholic Kings King of Castile & Aragon & Navarre}

"Most wonderful," said Middleton, when he saw the complete success of the means by which they had been rescued from a danger that he had conceived to be unavoidable. "The thought was a gift from Heaven."

"Old trapper," cried Paul, thrusting his fingers through his ~~rough~~ shaggy locks, "I have lined many a loaded bee into his hole, and ~~know~~ know something of the nature of the woods; but this is robbing ~~the~~ a hornet of his sting without touching the insect!"

"It will do—it will do," returned the old man, who, after the first moment of his success, seemed to think no more of the exploit. "Let the flames do their work for a short half hour, and then we will mount. That time is needed to cool the meadow; for these unshod beasts are tender on the hoof as a barefooted girl."

The veteran, on whose experience they all so implicitly relied ^{mean of repose} for protection, employed himself in reconnoitring ^{confrontation} objects in the distance, through the openings which the air occasionally ^{whenever} made in the immense bodies of smoke, that by this time lay in enormous ^{surrounding} vast piles ^{near} on every part of the plain.

act of descending ^{de-down & scribo-tumble.} anything. **DESCRIPTION OF A BEE HUNT.**

was full of THE beautiful forest in which we were encamped abounded in rotten bee trees; that is to say, trees in the decayed trunks of which wild bees had established their hives. It is surprising in what numbers countless swarms the bees have overspread the far West, within a few years but (a moderate number of years.) The Indians consider the bee the harbinger of the white man, as the buffalo is of the red man; and they say that in proportion as the bee advances the Indian and buffalo retire. They are always accustomed to associate the hum of the bee hive with the farm-house and flower garden, and to consider those industrious little insects as connected with the busy haunts of man; and I am told that the wild bee is seldom to be met with at any great distance from the frontier. They have been the heralds of civilization, steadfastly preceding it, as it advanced from the Atlantic borders; and some of the ancient settlers of the West pretend to give the very year when the honey bee first crossed the Mississippi. The Indians, with surprise, found the mouldering trees of their forests suddenly teeming with ambrosial sweets; and nothing, I am told, can exceed the greedy relish with which they banquet for the first time upon this unbought luxury of the wilderness. At present, the honey bee swarms in myriads in the noble groves and forests that skirt and intersect the prairies and extend along the alluvial bottoms of the rivers. It seems to me that these beautiful regions (answer literally) to the description of the land of promise,—"a land flowing with milk and honey;" for the rich pasture of the prairies is calculated to sustain herds of cattle as countless as the sand on the sea-shore, while the flowers with which they are enamelled render them a very paradise for the nectar-seeking bee.

We had not been long in the camp when a party set out in quest of a bee tree; and, being curious to witness the sport, I gladly accepted an invitation to accompany them. The party was headed by a veteran bee hunter, a tall, lank fellow, with a home-

spun garb that (hung loosely about his limbs, and with a straw ^{did not restrain} hat shaped not unlike a bee hive. A comrade, equally uncouth in ^{companion} garb, and without a hat, straddled along at his heels, with a long ^{rough} rifle on his shoulder. To these succeeded half a dozen others, ^{the legs apart} some with axes, and some with rifles; for no one stirs far from ^{sun follows} the camp without his fire-arms, so as to be ready either for wild deer or wild Indians.

After proceeding for some distance, we came to an open glade ^{place in the} on the skirts of the forest. Here our leader halted, and then ^{forest} advanced quietly to a low bush, on the top of which he placed a ^{low grass} piece of honey-comb. This, I found, was the bait or lure for the ^{here} wild bees. Several were soon humming about it, and diving into ^{the middle of the} the cells. When they had loaded themselves with honey, they ^{smaller ones} rose into the air, and darted off in a straight line, almost with ^{the velocity} the velocity of a bullet. The hunters watched attentively the ^{speed} course they took, and then set off in the same direction, stumbling ^{with their} along over twisted roots and fallen trees, with their eyes turned ^{towards the} up to the sky. In this way they traced the honey-laden bees to ^{all the way} their hive, in the hollow trunk of a blasted oak, where, after ^{with their} buzzing about for a moment, they entered a hole, about sixty feet from the ground. ^{+ run up = to break}

Two of the bee hunters now plied their axes vigorously at the ^{the} foot of the tree, to level it with the ground. The mere spectators ^{those who could} and amateurs, in the meantime, drew off to a cautious distance, to ^{take a better} be out of the way of the falling of the tree, and the vengeance of ^{the law of it} its inmates. The jarring blows of the axe seemed to have no ^{effect} effect in alarming or disturbing this most industrious community, ^{and they} They continued to ply at their usual occupations; (some arriving ^{so loaded with} fully freighted) into port, others sallying forth on new expeditions, ^{like so many} like so many merchantmen in a money-making metropolis, little ^{suspecting} suspecting impending bankruptcy and downfall. Even a loud ^{crack} crack, which announced the disruption of the trunk, failed to ^{divert} divert their attention from the intense pursuit of gain. At length, ^{down came} down came the tree with a tremendous crash, bursting open from ^{end to end} end to end, and displaying all the hoarded treasures of the ^{commonwealth} commonwealth community of bees. ^{Treasures which was a collection} of honey.

Small bundles of burning grass? One of the hunters immediately ran up with a wisp of lighted hay, as a defence against the bees. The latter, however, made no attack, and sought no revenge; they seemed stupefied by the catastrophe and unsuspecting of its cause, and remained crawling and buzzing about the ruins, without offering us any molestation. Every one of the party now fell to, with spoon and hunting-knife, to scoop out the flakes of honey-comb with which the hollow trunk was stored. Some of them were of old date, and of a deep brown colour; others were beautifully white, and the honey in their cells was almost limpid. Such of the combs as were entire were placed in camp kettles, to be conveyed to the encampment; those which had been shivered in the fall were devoured upon the spot. Every bee hunter might have been seen with a rich morsel in his hand, dripping about his fingers, and disappearing as rapidly as a cream-tart before the holiday appetite of a school-boy.

Nor was it the bee hunters alone that profited by the downfall of this industrious community. (As if the bees would carry through the similitude of their habits to those of laborious and gain-loving man,) I beheld numbers from rival hives arriving on eager wing, to enrich themselves with the ruin of their neighbours. These busied themselves as eagerly and cheerfully as so many wreckers on an Indiaman that has been driven on shore; plunging into the cells of the broken honey-combs, banqueting greedily on the spoil, and then winging their way, full-freighted, to their homes. As to the poor proprietors of the ruin, they seemed to have no heart to do anything, not even to taste the nectar that flowed around them; but crawled backward and forward in vacant desolation, as I have seen a poor fellow with his hands in his pockets whistling vacantly and despondingly about the ruins of his house which had been burned.

It is difficult to describe the bewilderment and confusion of the bees of the bankrupt hive who had been absent at the time of the catastrophe, and who arrived from time to time with full cargoes from abroad. At first they wheeled about in the air, in the place where their fallen tree had once reared its head, astonished at finding it all a vacuum. At length, as if comprehending their

fell down
stroke to turn
the hive

The honey was eaten up by these creatures, so quickly as a steamboat
to be eating up a number of honey by about half a dozen of a day or so
to be eating up a number of honey by about half a dozen of a day or so
to be eating up a number of honey by about half a dozen of a day or so

disaster, they settled down in clusters on a dry branch of a ^{group} neighbouring tree, from whence they seemed to contemplate the ^{the ruin of} prostrate ruin, and to buzz forth doleful lamentations over the ^{the ruin of} downfall of their republic. ^{the ruin of}

We now abandoned the place, leaving much honey in the hollow ^{also} of the tree. "It will all be cleared off by varmint," said one of ^{the} the rangers. "What vermin?" asked I. "Oh, bears, and ^{skunks} ^{and} ^{racoons} ^{and} ^{possums}," said he. "The bears are the ^{the} knowingest varmint for finding out a bee tree in the world. ^{They'll} ^{gnaw} for days together at the trunk, till they make a hole ^{big enough} big enough to get in their paws, and then they'll haul out honey, ^{bees, and all.}

W. IRVING. ^{Author of the}

WILD HORSES OF THE PRAIRIE. ^{cabage - 5000}

"WHEN Columbus discovered the New World no animal of the horse kind was found there. The horse that at present inhabits ^{native born} America, though not indigenous, has proved a flourishing exotic. ^{prosperous} Not only in a domestic state has he increased in numbers, but he ^{run away} has in many places escaped from the control of man, and now runs wild upon the great plains both of North and South America. Although you may find in America almost every 'breed' of ^{race} horses known in Europe, yet the great majority belong to two very distinct kinds. The first of these is the large English horse, in his different varieties, imported by the Anglo-Americans, and existing almost exclusively in the woodland territory of the United States. The second kind is the Andalusian-Arab—the horse of the Spanish conquerors,—a much smaller breed than the English. Arabian, but quite equal to him in ^{mettle} ^{and} ^{beauty} of form. ^{spirit} It is the Andalusian horse that is found throughout all Spanish America,—it is he that has multiplied to such a wonderful extent,—it is he that has 'run wild,' ^{grown in a state of nature.}

That the horse in his normal state is a dweller upon open plains ^{is proved} is proved by his habits in America; for in no part where the forest predominates is he found wild—only upon the prairies ^{prevails}

the north, and the llanos and pampas of the south, (where a
timbered tract forms the exception). ^{It is very unusual to find any}
He must have found these great steppes congenial to his ^{nest.}
natural disposition; for, only a very short time after the arrival
of the Spaniards in the New World, we find the horse a runaway ^{wild}
from civilization, not only existing in a wild state upon the ^{state.}
prairies, but in possession of many of the Indian tribes.
It would be an interesting inquiry to trace the change of habits
which the possession of the horse must have occasioned, among
those Arabs of the Western World. However hostile they may ~~have~~
have been to his European rider, they must have welcomed the ~~horse~~
horse as a friend. No doubt they admired the bold, free spirit of ^{like}
the noble animal, so analogous to their own nature. He and they
soon became inseparable companions, and have continued so from
that time to the present hour.

In 'Prairie-land' every tribe of Indians is in possession of the
horse; but the true type of the 'horse-Indian' is to be found
in the Comanche, the lord of that wide domain that extends from ^{country}
the Arkansas to the Rio Grande. ^{by American Indian breeding}
The Comanche is on horseback almost from his infancy—trans-
ferred, as it were, from his mother's arms to the withers of a
mustang. When able to walk, he is scarcely allowed to practise
this natural mode of progression, but performs all his movements
on the back of a horse. A Comanche would no more think of
making a journey afoot—even if it were only to the distance of a
few hundred yards—than he would of crawling upon his hands and
knees. The horse, ready saddled and bridled, stands ever near—
it is of little moment whether there is either saddle or bridle,
—and flinging himself on the animal's back, or his neck, or his
croup, or hanging suspended along his side, the Indian guides
him to the destined spot, usually at a rapid gallop. It is of no
consequence to the rider how fast the horse may be going, it will
not hinder him from mounting and dismounting at will. At
any time, by clutching the mane, he can spring upon the horse's
shoulders—just as may be often seen in the arena of the circus."—
for the exhibition of feats of horsemanship.

The following description of the wild horses of the prairies is given in Mr. Flint's Travels in the Western World:—

The day before we came in view of the Rocky Mountains, I saw, ^{completely} in the greatest perfection, that impressive, and, to me, almost ^{striking} sublime spectacle,—an immense drove of wild horses, for a long ^{pleased} time hovering round our path across the prairie. I had often ^{seen} seen great numbers of them before, mixed with other animals, ^{moving} apparently quiet and grazing like the rest. ^{wholly} ^{eating}

Here there were thousands, unmixed, unemployed, & their motions (if such a comparison may be allowed) as darting and as wild as those of humming-birds on the flowers. The tremendous snort with which the front columns of the phalanx made known their approach to us, seemed to be their wild and energetic way of expressing their pity and disdain for the servile lot of our ^{horses} horses, of which they appeared to be taking a survey. ^{patience}

They were of all colours, mixed, spotted, and diversified with every hue, from the brightest white to clear and shining black; and of every form and structure, from the long and slender race to those of firmer limb and heavier mould; and of all ages, from the curvetting colt to the range of the patriarchal steed,—drawn up in a line, and holding high their heads as they watched us in the rear. ^{behind}

Sometimes they curved their necks, and made no more progress than just enough to keep pace with our advance. Then there was

a kind of slow and walking minuet, in which (they performed various evolutions with the precision of the figures of a country dance.) Then a rapid movement shifted the front to the rear.

But still, in all their evolutions and movements, like the flight of sea-fowl, their lines were regular, and free from all indications of confusion.) At times, a simultaneous and sudden movement toward us almost inspired the apprehension of a united attack upon us. ^{There were no signs of disorder.}

After a moment's advance, a short and retrograde movement seemed to testify their proud estimate of their wild independence. The infinite variety of their rapid movements, their trappings and manœuvres, were of such a wild and almost terrific character.

Rebrounce in your own words. "Earlier might the wild
horses be the natural structure of the Indian & horse."

that it required but a moderate stretch of fancy to suppose them imagine
the geni of these grassy plains. *It was not difficult.*

At one period they were formed, to an immense depth, in front of us. A wheel, executed almost with the rapidity of thought, presented them hovering on our flanks. Then, again, the cloud of dust that enveloped their movements cleared away, and presented them in our rear. They evidently operated as a great annoyance, to the horses and mules of our cavalcade. The frightened movements, the increased indications of fatigue, sufficiently evinced, with their frequent neighings, what unpleasant neighbours they considered their wild compatriots to be. *fellows of the same country.*

So much did our horses appear to suffer from fatigue and terror, in consequence of their vivacity, that we were thinking of some way in which to drive them off, when suddenly a patient and laborious donkey of the establishment, who appeared to have regarded all their movements with philosophic indifference, pricked up his long ears, and gave a loud and most sonorous bray from his vocal shell. *Giving a voice throat.*

Instantly this prodigious multitude—and there were thousands of them—took what the Spaniards call the "stampede." With a trampling like the noise of thunder, or still more like that of an earthquake—a noise that was absolutely appalling—they took to their heels, and were all in a few moments invisible in the verdant depths of the plains, and we saw them no more.

CAPTURING THE WILD HORSE.

We left the buffalo camp about eight o'clock, and had a toilsome and harassing march of two hours, over ridges of hills covered with a ragged forest of scrub oaks and broken by deep gullies.

About ten o'clock in the morning, we came to where this line of rugged hills swept down into a valley, through which flowed the north fork of Red River. A beautiful meadow, about half a mile wide, enamelled with yellow autumnal flowers, stretched for

two or three miles along the foot of the hills; bordered on the opposite side by the river, whose banks were fringed with cotton-wood trees, the bright foliage of which refreshed and delighted the eye, after having been wearied by the contemplation of monotonous wastes of brown forest.

The meadow was finely diversified by groves and clumps of trees, so happily disposed that they seemed as if set out by the hand of art. As we cast our eyes over this fresh and delightful valley, we beheld a troop of wild horses, quietly grazing on a green lawn, about a mile distant, to our right; while to our left, at nearly the same distance, were several buffaloes, some feeding, others reposing and ruminating, among the high, rich herbage, under the shade of a clump of cotton-wood trees. The whole had the appearance of a broad beautiful tract of pasture-land on the highly ornamented estate of some gentleman farmer, with his cattle grazing about the lawns and meadows.

A council of war was now held, and it was determined by the present favourable opportunity, and try our hand at the grand hunting manoeuvre, which is called "ringing the wild horse." This requires a large party of horsemen, well mounted. They extend themselves in every direction, at certain distances apart, and gradually form a ring of two or three miles in circumference, so as to surround the game. This must be done with extreme care, for the wild horse is the most readily alarmed inhabitant of the prairie, and can scent a hunter at a great distance, if to windward. If he comes in the direction from which the wind blows

The ring being formed, two or three ride toward the horses, which start off in the opposite direction. Whenever they approach the bounds of the ring, however, a huntsman presents himself, and turns them from their course. In this way they are checked and driven back at every point, and kept galloping round and round this magic circle, until, being completely tired down, it is easy for hunters to ride up beside them, and throw the lariat over their heads. The prime horses, of the most speed, courage, and strength, however, are apt to break through, and escape; so that, in general, it is the second rate horses that are taken.

Preparations were now made for a hunt of this kind. The pack horses were taken into the woods, and firmly tied to trees, lest, in a rush of wild horses, they should break away. Twenty-five men were then sent, under the command of a lieutenant, to steal along the edge of the valley, within the strip of wood that skirted the hills. They were to station themselves about fifty yards apart, within the edge of the woods, and not to advance or show themselves until the horses dashed in that direction. Twenty-five men were also sent across the valley, to steal in like manner along the river bank that bordered the opposite side, and to station themselves among the trees.

A third party, of about the same number, was to form a line stretching across the lower part of the valley, so as to connect the two wings. Beattie and our other half-breed, Antoine, together with the ever officious Tonish, were to make a circuit through the woods, so as to get to the upper part of the valley, in the rear of the horses, and drive them forward into the kind of sack that we had formed, while the two wings should join behind them, and make a complete circle.

The flanking parties were quietly extending themselves out of sight, on each side of the valley, and the residue were stretching themselves like the links of a chain across it, when the wild horses gave signs that they scented an enemy,—snuffing the air, snorting, and looking about. At length they pranced off slowly toward the river, and disappeared behind a green bank.

Here, had the regulations of the chase been observed, they would have been quietly checked and turned back by the advance of a hunter from among the trees; (unluckily, however, we had our wild-fire, Jack-o'-lantern, little Frenchman to deal with.) Instead of keeping quietly up the right side of the valley, to get above the horses, the moment he saw them move toward the river he broke out of the covert of woods, and dashed furiously across the plain in pursuit of them. This put an end to all system. The half-breeds and half a score of rangers joined in the chase.

Away they all went over the green bank. In a moment or two the wild horses reappeared, and came thundering down the valley,

8. hours - the
go of the wood
rashed

ad. ad.

5/4

53

with
a very thin
bird yellow
manly

red

with Frenchman, half-breeds, and rangers, galloping and bellowing behind them. It was in vain that the line drawn across the valley attempted to check and turn back the fugitives; they were too hotly pressed by their pursuers: in their panic they dashed through the line, and clattered down the plain.

The whole troop joined in the headlong chase, some of the rangers without hats or caps, their hair flying about their ears, and others with handkerchiefs tied round their heads. The buffaloes, which had been calmly ruminating among the herbage, heaved up their huge forms, gazed for a moment at the tempest that came scouring down the meadow, then turned and took to heavy rolling flight. They were soon overtaken. The promiscuous masses were pressed together by the contracting sides of the valley, and away they went, pell mell, hurry skurry, wild buffalo, wild horse, wild huntsman, (with clang and clatter,) and (whoop and halloo, that made the forests ring.

At length the buffaloes turned into a green brake on the river bank, while the horses dashed up a narrow defile of the hills, with their pursuers close at their heels. Beattie passed several of them, having fixed his eye upon a fine Pawnee horse that had his ears slit, and saddle-marks upon his back. He pressed him gallantly, but lost him in the woods.

Among the wild horses was a fine black mare, which, in scrambling up the defile, tripped and fell. A young ranger sprang from his horse and seized her by the mane and muzzle. Another ranger dismounted, and came to his assistance. The mare struggled fiercely, kicking and biting, and striking with her fore feet; but a noose was slipped over her head, and her struggles were in vain.

It was some time, however, before she gave over rearing and plunging and lashing out with her feet on every side. The two rangers then led her along the valley, by two strong lariats, which enabled them to keep at a sufficient distance on each side to be out of the reach of her hoofs; and whenever she struck out in one direction, she was jerked in the other. In this way her spirit was gradually subdued.

Briefly describe the several modes of hunting the buffalo.

356

THE BUFFALO.

As to Tonish, who had marred the whole scheme by his precipitancy, he had been more successful than he deserved, having managed to catch a beautiful cream-coloured colt, about seven months old, that had not had strength to keep up with its companions. The mercurial little Frenchman (was beside himself) with exultation. It was amusing to see him with his prize. The colt would rear and kick, and struggle to get free, when Tonish would take it about the neck, wrestle with it, jump on its back, and cut as many antics as a monkey with a kitten. *make a monkey of with his animal*

Nothing surprised me more, however, than to witness how soon these poor animals, thus taken from the unbounded freedom of the prairie, yielded to the dominion of man. In the course of two or three days the mare and colt went with the lead horses, and became quite docile. *docile - 6*

W. IRVING.

THE BUFFALO.

The buffalo, or bison, is a sort of wild bull with a monstrously shaggy head and a very ferocious aspect. Buffaloes are gregarious animals; that is, they live and feed together in herds. Almost all animals that feed on grass and herbage are gregarious, while beasts of prey are generally solitary in their habits. It is necessary that the latter should be so; for, in order to succeed in their hunting, they must prowl about alone, or watch in ambush, patiently and in silence, for their prey. There are, however, a few exceptions. Wolves, for instance, usually hunt together in packs;—the reason of this being, that wolves live generally by killing and devouring animals larger than themselves, and so are obliged to combine their strength in order to overpower their prey. *seen - 4*

So abundant is the food furnished by the luxuriant grass of the prairies, and so boundless is the extent of the plains over which the American buffaloes roam, that the herds increase to an almost incredible extent. Travellers sometimes find the whole region black with them in every direction as far as the eye can reach.

In one instance which has been described, the country was covered with a herd, or an aggregation of herds, so vast that the party *collection* journeying were six days in passing through it! The aspect which the scene presented must have been truly appalling. Only *fearful*. imagine, five, ten, or even twenty thousand buffaloes in sight at one time, spreading in every direction over the plains,—some bellowing, some fighting, some advancing defiantly toward their *boldly* supposed foes, and tearing up the soil with their hoofs and horns *the travellers*—the earth trembling under their tramp, and the air filled with *when they were* their prolonged and portentous murmur *against the trees* *continued* *giving signs* *of call* *in voice* *permeated*.

The frosts and snows, coming down from the Arctic regions in winter, *bind up* and cover large tracts of land, which in summer are clothed with luxuriant herbage. The grazing animals, accordingly, move northward to great distances as the summer advances. *by the cause* These migrations, in respect to the number and the solid mass of *the animals* the moving columns, surpass in grandeur all other spectacles that the animal kingdom affords. *place to place* *comp* *body* *in* *heavily* *in* *between*

The country, being intersected by rivers and streams in every part, would seem to interpose great difficulties in the way of the passage of the animals to and fro. But though the difficulties are great, they are not insurmountable. The herd, on approaching a *line* *unconquerable* river, if it is fordable, descend the bank in a massive column, and *capable of* wade or swim across. If the descent of the bank be *not already* *in* *the* *body* gradual, it soon becomes so by the trampling of so many heavy *climbing* hoofs; the most daring, of course, impelled partly by their courage and partly by the pressure from behind, going down first *strength* and breaking the way. *opening*.

It not unfrequently happens, however, that the landing-place proves unfavourable when the animals arrive on the further side; *opposite* so that, instead of a hard beach by which to ascend to the level of *shore* the plain, they find themselves sinking into quicksands or mire. *sand easily* *mired* *with* *earth* The scene presented on such occasions is really terrible. The older and stronger of the herd are perhaps able, after long-continued and desperate struggles—during which they trample down and climb over the others in their excitement and terror—to regain their footing and clamber up the bank; but often many are unable

free from to extricate themselves, and perish miserably—their bodies being borne down the stream by the current.

quietly The case is still worse, sometimes, when the river is frozen, and the animals are consequently compelled to cross on the ice. They have no means of judging of its strength except by taking the opinion of the leaders, who go down cautiously, and step, in a timid, hesitating manner, on the margin of it; and then if they perceive no sign of weakness under the weight of a single tread, they suppose it to be strong, and proceed. But though it may be strong enough to bear one, it may be much too weak to sustain the weight of a hundred.

begin Still the whole herd follow on, and perhaps when the head of the column has advanced toward the middle of the stream, some cracking sound or other token of weakness gives the alarm. The leaders stop, the others press on; the ice becomes immensely overloaded, and presently goes down with a great crash. Then ensues a scene of struggling and commotion and alarm impossible to be described. Animals of every age and size are writhing and plunging in the water, vainly trying to climb up on pieces of ice, or to force their way through the floating fragments to the shore of ice—bellowing all the time with terror. Some at last gain the bank, but great numbers are swept away beneath the unbroken ice and drowned.

following make tracks make a work by treading in a line carriage In making their journeys, the buffaloes move in columns, those behind keeping in the track of those before; and in this way they make trails, which soon become well worn; and being pretty wide, on account of the columns being composed of several animals abreast, they look like waggon roads. These roads extend, in some places, for hundreds of miles across the country. When they are once made, they are followed year after year by successive herds.

to maintain their position The buffalo has many enemies, but the greatest of all is civilized man. So long as the vast herds were attacked only by bears, packs of wolves, and Indians armed simply with spears and arrows, they were able to hold their ground. The bulls of the herd, with their prodigious strength, and the formidable weapons

with which nature has provided them in their horns, maintained terrible conflicts with these foes, and often came off victorious from the fight. But when the white man came, mounted upon a horse and armed with a rifle, no choice was left to them but to abandon the field; and in proportion as the tide of emigration moves on ^{eastward} toward the west, the buffalo retires before it, and will probably in time entirely disappear. ^{and as the white hunters move on toward the west}

"The Indian has several modes of hunting the buffalo. If alone, ^{he will} and he wishes to make a grand *coup*, he will leave his horse at a ^{great} attack ^{distance}—the animal being trained to remain where his master has left him. The hunter then approaches the herd with great caution, keeping to leeward—to avoid being 'winded' by the old sentinel bulls who keep watch. Should there be no cover to ^{shelter} the approach of the hunter, the result would be that the bulls would discover him, and, giving out their bellow of alarm, ^{cause the others to scamper off.}

To guard against this, the Indian has already prepared himself by adopting a *ruse*; which consists in disguising himself in the ^{artificial} skin of a buffalo, horns and all complete, and approaching the herd as if he were some ^{stray} individual that had been left behind, ^{and was just on the way to join its fellows.} Even the motions of the buffalo when browsing are closely imitated by the red hunter; and, unless the wind be in favour of his being scented by the bulls, this device will insure the success of a shot. Sometimes the skin of the large whitish-gray wolf is used in this masquerade with equal success. This may appear singular, since the animal itself is one of the deadliest enemies of the buffalo; a large pack of them hanging on the skirts of every herd, and patiently waiting for an opportunity to attack. But as this attack is only directed against the younger calves, or some disabled or decrepit individual that may lag behind, the strong and healthy ones have no fear of the wolves, and permit them to squat upon the prairie within a few feet of where they are browsing! Indeed, they could not hinder them, even if they wished, as the long-legged wolf in a few springs can easily get

heavy buffaloes

they think the
and fear

threatening,
from within

thief-like places

timorous re-
sidents in

their neighbors
hood.

Indian riders

whichever

unsuccessful

no alarm

— — —

they are in
this place

take off

done

in front

gallop after

ance-

means

away

Reid.

out of the way of the more clumsy ruminant, and therefore does not dread the lowering frontlet of the most shaggy and ill-tempered bull in the herd.

Of course the hunter in the guise of a wolf obtains the like privilege of close quarters; and, when he has arrived at the proper distance for his purpose, he prepares himself for the work of destruction. The bow is the weapon he uses. Though the rifle is

now a common instrument in the hands of many of the horse-Indians, the bow is preferred for the species of 'still hunting' here described. The first crack of a rifle would scatter the herd,

leaving the hunter perhaps (only an empty gun for his pains;) while an arrow at such close quarters is as deadly in its effect, and, being a silent weapon, no alarm is given to any of the buffaloes, except that one which has felt the deadly shaft.

It sometimes happens that the unsuspecting herd (keep the ground till the Indian has emptied his quiver. Nay, longer than that; for it often occurs that the disguised buffalo or wolf (as the case may be) approaches the bodies of those that have fallen, recovers some of his arrows, and uses them a second time with like deadly effect!

Of course this is not an every-day matter, and can only be accomplished when the buffaloes are in a state of comparative rest, or browsing slowly. More generally, they detect the dangerous counterfeit in time to save themselves; or else keep moving too rapidly for the hunter to follow them on foot. His only resource then is to ride rapidly up on horseback, shoot his arrows without dismounting, or strike the victim with his long lance while galloping side by side with it. But in this kind of chase the hunter is rarely alone: the whole tribe take part in it; and, mounted on their well-trained mustangs, they often pursue the buffalo herds for an hour or more, before the latter can get off and hide themselves in the distance, or behind the swells of the prairie."

—Reid.

THE INDIAN HUNTER.

When the summer harvest was gathered in, *reapers, collected.*
 And the sheaf of the gleaner (grew white and thin) *showed, as if no more was to be gathered.*
 And the plough-share was in its furrow left, *showed as if the plough was no longer to be used.*
 Where the stubble land had been lately cleft, *not a sign of gathering.*
 An Indian hunter, with unstrung bow, *loosened another*
 Looked down where the valley lay stretched below
 He was a stranger there, and all that day
 Had been out on the hills) — a perilous way; *dangerous.*
 But the foot of the deer was far and fleet, *there was no deer near him.*
 And the wolf kept aloof from the hunter's feet; *swift: remained at*
 And bitter feelings passed o'er him then, *a distance from*
 As he stood by the populous haunts of men. *haunted place.*
 The winds of autumn came over the woods, *blew.*
 As the sun stole out from their solitudes; *quietly passed away. lonely place.*
 The moss was white on the maple's trunk, a *kind of black tree.*
 (And dead from its arms the pale vine shrunk; *dead, contracted.*
 And ripened the mellow fruit hung, and red, *sweet of taste.*
 Where the trees withered leaves around it shed, *let fall.*
 The foot of the reaper moved slow on the lawn,
 And the sickle cut down the yellow corn; *scythe.*
 The mower sung loud by the meadow side,
 Where the mists of evening were spreading wide; *darkness.*
 And the voice of the herdsman came up the lea, *meadow*
 And the dance went round by the greenwood tree.
 Then the hunter turned away from that scene, *went*
 Where the home of his fathers once had been, *ancestors*
 And heard, by the distant and measured stroke, *uniform.*
 That the woodman hewed down the giant oak;
 And burning thoughts flashed over his mind, *painful, quickly moved*
 Of the white man's faith and love unkind. *treachery, want of*
 The moon of the harvest grew high and bright,
 As her golden horn pierced the cloud of white *light rays of the moon.*
 A footstep was heard in the rustling brake *not a footstep*
 Where the beech overshadowed the misty lake, *a tree.*

And a mourning voice, and a plunge from shore—
And the hunter was seen on the hills no more.

Calum When years had passed on, by that still lake side

fisher is a man who catches fish for the use of his family - a body with a knife in his hand. The fisher looked down through the silver tide.
And there, on the smooth yellow sand displayed, exhibited.
A skeleton wasted and white was laid;
And 'twas seen, as the waters moved deep and slow,
That the hand was still grasping a hunter's bow.

LONGFELLOW.

THE LAST OF THE RED MEN.

the rays of the setting sun The sun's last ray was glowing fair, on crag, and tree, and flood; *deep place*
the sun's last ray And fell in mellow softness where the lonely Indian stood. *the sun's last ray*
the sun's last ray Beneath his eye, (in living gold,) the broad Pacific lay;
the sun's last ray Unruffled there, a skiff might hold its bright and fearless way. *Calum*
the sun's last ray Far, far behind him, mountains blue in shadowy distance melt; *in darkness*
the sun's last ray And far beyond, the dark woods grew, where his forefathers dwell *great distance*
the sun's last ray No breathing sound was in the air, as, leaning on his bow, *in silence*
the sun's last ray A lone and weary pilgrim there, he murmured stern and low:

"Far by Ohio's mighty river, bright star, I've worshipped thee!

My native stream—its bosom never the red man more may see!

the pale face The pale-face rears his wigwam where our Indian hunters roved; *the pale face*

the hatchet His hatchet fells the forest fair, our Indian maidens loved, *the hatchet*

the thousand warriors A thousand warriors bore in war the token of my sires; *the thousand warriors*

the foeman On all the hills were seen afar their blazing council-fires! *the foeman*

the foeman The foeman heard their war-whoop shrill, and held his breath in fear; *the foeman*

the foeman And in the wood, and on the hill, their arrows pierced the deer. *the foeman*

the stranger Where are they now?—the stranger's tread is on their silent place! *the stranger*

the fading light On fading light on me is shad—the last of all my race! *the fading light*

the summer's light Where are they now?—in summer's light, go seek the winter's snow *the summer's light*

the forgotten Forgotten is our name and might, and broken is our bow! *the forgotten*

the white man The white man came; his bayonets gleam where sachems held *the white man*

the white man their sway; *a layer for burning of the red of a gun* Bayonets hold *the white man*

the white man And, like the shadow of a dream, our tribe has passed away!" *the white man*

BRYANT.

THE FIRST VOYAGE OF COLUMBUS.

(A.D. 1492.)

EAGER to obtain the promised pension, the seamen were continually giving the cry of "land!" on the least appearance of the kind.

To put a stop to these false alarms, which produced continual disappointments, Columbus declared that should any one give such notice, and land not be discovered within three days afterwards, he should thenceforth forfeit all claim to the reward.

On the evening of the 6th of October, Martin Alonso Pinzon began to lose confidence in their present course, and proposed that they should stand more to the southward. Columbus, however, still persisted in steering directly west. Observing this difference of opinion in a person so important in his squadron as Pinzon, and fearing that chance or design might scatter the ships, he ordered that, should either of the caravels be separated from him, it should stand to the west, and endeavour, as soon as possible, to join company again: he directed, also, that the vessels should keep near to him at sunrise and sunset, as at these times the state of the atmosphere is most favourable to the discovery of distant land.

On the morning of the 7th of October, at sunrise, several of the admiral's crew thought they beheld land in the west, but so indistinctly that no one ventured to proclaim it, lest he should be mistaken, and forfeit all chance of the reward. The *Nina*, however, being a good sailer, pressed forward to ascertain the fact. In a little while a flag was hoisted at her mast-head, and a gun discharged, being the preconcerted signals for land. New joy was awakened throughout the little squadron, and every eye was turned to the west. As they advanced, however, their cloud-built hopes faded away, and before evening the fancied land had again melted into air.

The crews now sank into a degree of dejection proportioned to their recent excitement, but new circumstances occurred to arouse them. Columbus, having observed great flights of small field-birds going towards the south-west, concluded that they must be in the neighbourhood of land, where they would find food and a resting-

place. He knew the importance which the Portuguese voyagers attached to the flight of birds, by following which they had discovered most of their islands. He had now come seven hundred and fifty leagues, the distance at which he had computed to find the island of Cipango: as there was no appearance of it, he might have missed it through some mistake in the latitude. He determined, therefore, on the evening of the 7th of October, to alter his course to the west-south-west, the direction in which the birds generally flew, and continue in that direction for at least two days.

After all, it was no great deviation from his main course, and would meet the wishes of the Pinzons, as well as be inspiring to his followers generally. For three days they stood in this direction, and the further they went the more frequent and encouraging were the signs of land. Flights of small birds of various colours, some of them such as sing in the fields, came flying about the ships, and then continued towards the south-west; and others were heard also flying by in the night. Tunny-fish played about in the smooth sea; and a heron, a pelican, and a duck, were seen, all bound in the same direction. The herbage which floated by was fresh and green, as if recently from land; and the air, Columbus observes, was sweet and fragrant as April breezes in Seville.

All these, however, were regarded by the crews as so many delusions beguiling them on to destruction; and when, on the evening of the third day, they beheld the sun go down on a shoreless horizon, they broke forth into turbulent clamour. They exclaimed against this obstinacy in tempting fate by continuing on into a boundless sea. They insisted upon returning home, and abandoning the voyage as hopeless. Columbus endeavoured to pacify them by gentle words and promises of large rewards; but, finding that they only increased in clamour, he assumed a decided tone. He told them it was useless to murmur; the expedition had been sent by the sovereigns to seek the Indies, and, happen what might, he was determined to persevere, until, by the blessing of God, he should accomplish the enterprise.

Columbus was now at open defiance with his crew, and his situation became desperate. Fortunately the manifestations of the

When every thing was still, a gale of wind came from the west, and the ships were driven back to the open sea.

vicinity of land were such on the following day as no longer to admit a doubt. Beside a quantity of fresh weeds, such as grow in rivers, they saw a green fish of a kind which keeps about rocks; then a branch of thorn with berries on it, and recently separated from the tree, floated by them; then they picked up a reed, a small board, and, above all, a staff artificially carved. All gloom and mutiny now gave way to sanguine expectation; and throughout the day each one was eagerly on the watch, in hopes of being the first to discover the long-sought-for land.

In the evening, when, according to invariable custom on board the admiral's ship, the mariners had sung the *Salve Regina*, or vesper hymn to the Virgin, he made an impressive address to his crew. He pointed out the goodness of God in thus conducting them, by soft and favouring breezes, across a tranquil ocean, cheering their hopes continually with fresh signs, increasing as their fears augmented, and thus leading and guiding them to promised land. He now reminded them of the orders he had given on leaving the Canaries, that, after sailing westward seventy hundred leagues, they should not make sail after midnight. (Present appearances authorized such a precaution.) He thought it probable they would make land that very night; he ordered, therefore, a vigilant look-out to be kept from the fore-castle, promising, to whomsoever should make the discovery, a doublet of velvet in addition to the pension to be given by the sovereigns. The breeze had been fresh all day, with more sea than usual, and they had made great progress. At sunset they had stood again to the west, and were ploughing the waves at a rapid rate, the *Pinta* keeping the lead, from her superior sailing. The greatest animation prevailed throughout the ships; not an eye was closed that night. As the evening darkened, Columbus took his station on the top of the castle or cabin on the high poop of his vessel, ranging his eye along the dusky horizon, and maintaining an intense and unremitting watch. About ten o'clock he thought he beheld a light glimmering at a great distance. Fearing his eager hopes might deceive him, he called to Pedro Gutierrez, gentleman of the king's bed-chamber, and inquired

whether he saw such a light; the latter replied in the affirmative. Doubtful whether it might not yet be some delusion of the fancy, Columbus called Rodrigo Sanchez of Segovia and made the same inquiry. By the time the latter had ascended the round-house the light had disappeared. They saw it once or twice afterwards in sudden and passing gleams, as if it were a torch in the bark of a fisherman, rising and sinking with the waves, or in the hand of some person on shore, borne up and down as he walked from house to house. So transient and uncertain were these gleams, that few attached any importance to them; Columbus, however, considered them as certain signs of land, and, moreover, that the land was inhabited.

WASHINGTON IRVING.

DISCOVERY OF AMERICA.

A LITTLE after midnight the joyful sound of "land! land!" was heard from the *Pinta*, which kept always ahead of the other ships. But having been so often deceived by fallacious appearances, every man was now become slow of belief, and waited, in all the anguish of uncertainty and impatience, for the return of day. As soon as morning dawned, all doubts and fears were dispelled. From every ship an island was seen about two leagues to the north, whose flat and verdant fields, well stored with wood and watered with many rivulets, presented the aspect of a delightful country. The crew of the *Pinta* instantly began the *Te Deum*, as a hymn of thanksgiving to God, and were joined by those of the other ships, with tears of joy and transports of congratulation. This office of gratitude to Heaven was followed by an act of justice to their commander. They threw themselves at the feet of Columbus, with feelings of self-condemnation mingled with reverence. They implored him to pardon their ignorance, incredulity, and insolence, which had created him so much unnecessary disquiet, and had so often obstructed the prosecution of his well-concerted plan; and passing, in the warmth of admiration, from one extreme to another, they now pronounced the man, whom they had so lately reviled and threatened, to be a person inspired by Heaven with

sagacity and fortitude more than human, in order to accomplish a ^{powerful} design so far beyond the ideas and conceptions of all former ages. ^{ing attract}

As soon as the sun arose, all their boats were manned and ^{ready to sail} armed. They rowed towards the island with their colours displayed, with warlike music, and other martial pomp. As they ^{near} approached the coast, they saw it covered with a multitude of people, whom the novelty of the spectacle had drawn together, whose attitudes and gestures expressed wonder and astonishment at the strange objects which presented themselves to their view. Columbus was the first European who set foot on the new world which he had discovered. He landed in a rich dress, and with a naked sword in his hand. His men followed, and kneeling down, they all kissed the ground which they had so long desired to see. They next returned thanks to God for conducting their voyage to such a happy issue. They then took solemn possession of the country for the crown of Castile and Leon, with all the formalities which the Portuguese were accustomed to observe in acts of this kind in their new discoveries. ^{newness position movements}

The Spaniards, while thus employed, were surrounded by many of the natives, who gazed in silent admiration upon actions which they could not comprehend, and of which they did not foresee the consequences. The dress of the Spaniards, the whiteness of their skins, their beards, their arms, appeared strange and surprising. The vast machines in which they had traversed the ocean, that seemed to move upon the waters with wings, and uttered a dreadful sound, resembling thunder, accompanied with lightning and smoke, struck them with such terror, that they began to respect their new guests as a superior order of beings, and concluded that they were children of the Sun who had descended to visit the earth. ^{understand fully result}

ROBERTSON.

THE RETURN OF COLUMBUS TO EUROPE.

In the spring of 1493, while the Court was still at Barcelona, letters were received from Christopher Columbus, announcing his return to Spain, and the successful achievement of his great ^{purpose}

adventure enterprise, by the discovery of land beyond the western ocean. The delight and astonishment raised by this intelligence were ^{high} proportioned to the scepticism with which his project had originally been viewed. The sovereigns were now filled with a natural impatience to ascertain the extent and other particulars of the important discovery; and they transmitted instant instructions to the admiral to repair to Barcelona, as soon as he should have made the preliminary arrangements for the further prosecution of his enterprise.

The great navigator had succeeded, as is well known, after a voyage of many difficulties,—but which difficulties had been much augmented by the distrust and mutinous spirit of his followers,—in discovering land on the 12th of October, 1492. After some months spent in exploring the delightful regions, now for the first time thrown open to the eyes of a European, he embarked in the year 1493 for Spain. One of his vessels had previously foundered and another had deserted him; so that he was left alone to retrace his course across the Atlantic. After a most tempestuous voyage, he was compelled to take shelter in the Tagus, sorely against his inclination. He experienced, however, a most honourable reception from the Portuguese monarch, John II., (who did ample justice to the great qualities of Columbus, although he had failed to profit by them.* After a brief delay, the admiral resumed his voyage, and crossing the bar of Saltes, entered the harbour of Palos about noon, on the 15th of March, 1493, being exactly seven months and eleven days since his departure from that port. Great was the commotion in the little community of Palos, as they beheld the well-known vessel of the admiral re-entering their harbour. (Their desponding imaginations had long since consigned him to a watery grave;) for, in addition to the preternatural horrors which hung over the voyage, they had experienced the most stormy and disastrous winter (within the recollection of the oldest mariners.) Most of them had relatives or friends on board. They thronged immediately to the shore, to assure themselves,

* Some years before, Columbus had made an unsuccessful application to the Portuguese king for assistance in the prosecution of his plan of discovery.

with their own eyes, of the truth of their return. When they beheld their faces once more, and saw them accompanied by the numerous evidences which they brought back of the success of the expedition, they burst forth in acclamations of joy and gratulation. They awaited the landing of Columbus, when the whole population of the place accompanied him and his crew to the principal church, where solemn thanksgivings were offered up for their return, while every bell in the village sent forth a joyous peal in honour of the happy event.

The admiral was too desirous of presenting himself before the sovereigns (to protract his stay long at Palos.) He took with him on his journey specimens of the multifarious products of the newly-discovered regions. He was accompanied by several of the natives, arrayed in their simple barbaric costume, and decorated, as he passed through the principal cities, with collars, bracelets, and other ornaments of gold, rudely fashioned; he exhibited also considerable quantities of the same metal in dust and in crude masses, numerous vegetable exotics possessed of aromatic or medicinal virtue, and several kinds of quadrupeds unknown in Europe, and birds, whose variety of gaudy plumage gave a brilliant effect to the pageant. The admiral's progress through the country was everywhere impeded by the multitudes thronging forth to gaze at the extraordinary spectacle, and the more extraordinary man, who, in the emphatic language of that time, which has now lost its force from familiarity, first revealed the existence of a "New World." As he passed through the busy, populous city of Seville, every window, balcony, and house-top which could afford a glimpse of him is said to have been crowded with spectators.

It was the middle of April before Columbus reached Barcelona. The nobility and cavaliers in attendance on the Court, together with the authorities of the city, came to the gates to receive him and escorted him to the royal presence. Ferdinand and Isabella were seated, with their son, Prince John, under a superb canopy of state, awaiting his arrival. On his approach they rose from their seats, and extending their hands to him to salute, caused

Columbus obtained honors by the success of his intellect by means of which
 of his discoveries and became the means of revealing the treasures of that
 new world to the world; which has such honors could only be obtained by means
 of high social position or great wealth or by victory in battle, obtained by the
 new world.

him to be seated before them. These were unprecedented marks of
 of condescension, to a person of Columbus's rank, in the haughty
 and ceremonious court of Castile. It was, indeed, the proudest
 moment in the life of Columbus. He had fully established the
 truth of his long-contested theory, in the face of argument,
 sophistry, sneer, scepticism, and contempt. He had achieved
 this not by chance, but by calculation, supported through the
 most adverse circumstances by consummate conduct. The honours
 paid him, which had hitherto been reserved only for rank or
 fortune, or military success, purchased by the blood and tears of
 thousands, were, in his case, a homage to intellectual power suc-
 cessfully exerted in behalf of the noblest interests of humanity.)

After a brief interval, the sovereigns requested of Columbus a
 recital of his adventures. His manner was sedate and dignified,
 but warmed by the glow of natural enthusiasm. He enumerated
 the several islands he had visited, expatiated on the temperate
 character of the climate, and the capacity of the soil for every
 variety of production, appealing to the samples imported by him
 as evidence of their natural productiveness. He dwelt more at
 large on the precious metals to be found in these islands, which
 he inferred less from the specimens actually obtained than from
 the uniform testimony of the natives to their abundance in the
 unexplored regions of the interior. (Lastly, he pointed out the
 wide scope afforded to Christian zeal in the illumination of a race
 of men whose minds, far from being wedded to any system of
 idolatry, were prepared, by their extreme simplicity, for the
 reception of pure and uncorrupted doctrine. This last considera-
 tion touched Isabella's heart most sensibly; and the whole audi-
 ence, kindled with various emotions by the speaker's eloquence,
 filled up the perspective with the gorgeous colouring of their own
 fancies, as ambition, or avarice, or devotional feeling predominated
 in their bosoms. When Columbus ceased, the king and queen,
 together with all present, cast themselves on their knees in
 grateful thanksgivings, while the solemn strains of the Te Deum
 were poured forth by the choir of the royal chapel, as in com-
 memoration of some glorious victory.

PRESCOTT was a well-
 known American historian.
 important was his
 history of Conquest of
 Peru.

+ desire for power.

THE WEST INDIES.

A POEM, BY JAMES MONTGOMERY.

Life & Writing

PART I.

Introduction; on the abolition of the slave trade—The mariner's compass—Columbus—The discovery of America—The West Indian Islands—The Caribs—Their Extermination.

INTRODUCTION—ABOLITION OF THE SLAVE TRADE.

"Thy chains are broken, Africa, be free!"
Thus saith the island-empress of the sea;
Thus saith Britannia. O ye winds and waves!

Waft the glad tidings to the land of slaves;
Proclaim on Guinea's coast, by Gambia's side,
And far as Niger rolls his eastern tide,
Through radiant realms, beneath the burning zone,
[unknown,
Where Europe's curse is felt, her name
"Thus saith Britannia, empress of the sea,
Thy chains are broken, Africa, be free!"

THE MARINER'S COMPASS.

Long lay the ocean-paths from man
concealed; [revealed,
Light came from heaven,—the magnet was
A surer star to guide the seaman's eye
Than the pale glory of the northern sky;
Allike ordained to shine by night and day,
Through calm and tempest, with unsetting ray;
Where'er the mountains rise, the billows roll,
Still with strong impulse turning to the pole,
True as the sun is to the morning true,
Though light as film, and trembling as the dew.

Then man no longer plied with timid oar
And failing heart along the windward shore;
Broad to the sky he turned his fearless sail,
Defied the adverse, wooed the favouring gale,
Bared to the storm his adamant breast,
Or soft on ocean's lap lay down to rest;

While free, as clouds the liquid ether sweep,
His white-winged vessels coursed the unbounded deep;
From clime to clime the wanderer loved to roam,
The waves his heritage, the world his home.

COLUMBUS.

Then first Columbus, with the mighty hand
Of grasping genius, weighed the sea and land,
The floods o'erbalanced;—where the tide of light,

Day after day, rolled down the gulf of night,
There seemed one waste of waters:—long in vain

His spirit brooded o'er the Atlantic main;
When sudden as creation burst from nought,
Sprang a new world through his stupendous thought,
Light, order, beauty! While his mind explored

The unvelling mystery, his heart adored;
Where'er sublime imagination trod,
He heard the voice, he saw the face of God.
Far from the western cliffs he cast his eye
O'er the wide ocean stretching to the sky;
In calm magnificence the sun declined,
And left a paradise of clouds behind:
Proud at his feet, with pomp of pearl and gold,
The billows in a sea of glory rolled:

"Ah! on this sea of glory might I sail,
Track the bright sun, and pierce the eternal veil
That hides those lands, beneath Hesperian
Where daylight sojourns till our morrow rise!"

admiration - as hard as stone.

Thoughtful he wandered on the beach
alone;

Mild o'er the deep the vesper planet shone,
The eye of evening brightening through the
west

Till the sweet moment when it shut to rest;
"Whither, O golden Venus! art thou fled?
Not in the ocean-chambers lies thy bed;
Round the dim world thy glittering chariot
drawn,

Pursues the twilight, or precedes the dawn;
Thy beauty noon and midnight never see,
The morn and eve divide the year with thee."

Soft fell the shades, till Cynthia's slender
bow

Crested the furthest wave, then sunk below:
"Tell me, resplendent guardian of the night,
Circling the sphere in thy perennial flight,
What secret path of heaven thy smiles adorn,
What nameless sea reflects thy gleaming
horn?"

Now earth and ocean vanished, all serene
The starry firmament alone was seen;
Through the slow, silent hours, he watched
the host

Of midnight suns in western darkness lost,
Till Night himself, on shadowy pinions borne,
Fled o'er the mighty waters, and the morn
danced on the mountains. "Lights of
heaven!" he cried,

"Lead on; I go to win a glorious bride;
Fearless o'er gulfs unknown I urge my way,
Where peril prowls, and shipwreck lurks
for prey."

Hope swells my sail. In spirit I behold
That maiden-world, twin sister of the old,
By Nature nursed beyond the jealous sea,
Denied to ages, but betrothed to me."

DISCOVERY OF AMERICA.

The winds were prosperous, and the
billows bore

The brave adventurer to the promised shore;
Far in the west, arrayed in purple light,
Dawned the new world on his enraptured
sight;

Not Adam, loosened from the encumbering
Waked by the breath of God to instant birth,
With sweeter, wilder wonder gazed around;
When life within, and light without he found;
When, all creation rushing o'er his soul,
He seemed to live and breathe throughout
the whole.)

So felt Columbus, when, divinely fair, *beautifully fair*
At the last look of resolute despair,
The Hesperian isles, (from distance dimly
blue,

With gradual beauty opened on his view, became visible.
In that proud moment, his transported mind
The morning and the evening worlds new & old
combined,

And made the sea, that sungered them before, *separated*
A bond of peace, uniting shore to shore, *cause*

Vain, visionary hope! rapacious Spain *retreat*
Followed her hero's triumph o'er the main,
Her hardy sons in fields of battle tried,
Where Moor and Christian desperately died, *heathen*
A rabid race, fanatically bold,
And steeled to cruelty by lust of gold,
Traversed the waves, the unknown world
explored, [sword:]
The cross their standard, but their faith the
Their steps were graves; o'er prostrate
realms they trod; [to God.]
They worshipped Mammon while they vowed

Let nobler bards in loftier numbers tell, *Allusion*
How Cortez conquered, Montezuma fell;
How fierce Pizarro's ruffian arm o'erthrew
The sun's resplendent empire in Peru;
How, like a prophet, old Las Casas stood,
And raised his voice against a sea of blood,
Whose chilling waves recoiled while he
foretold

His country's ruin by avenging gold.
—That gold, for which unpitied Indians fell,
That gold, at once the snare and scourge of
hell, [to shed,
Thenceforth by righteous Heaven was doomed
Unmingled curses on the spoiler's head;
For gold the Spaniard cast his soul away, —
His gold and he were every nation's prey.

But themes like these would ask an angel-
lyre,
Language of light and sentiment of fire;
Give me to sing, in melancholy strains,
Of Carib martyrdoms and Negro chains;
One race by tyrants rooted from the earth,
One doomed to slavery by the taint of birth.

THE WEST INDIAN ISLANDS.

Where first his drooping sails Columbus
furled,
And sweetly rested in another world,
Amidst the heaven-reflecting ocean, smiles
(A constellation of Elysian isles) *green & beautiful*

Fair as Orion when he mounts on high,
Sparkling with midnight splendour from the sky;

They bask beneath the sun's meridian rays,
(When not a shadow breaks the boundless blaze;)

The breath of ocean wanders through their vales

In morning breezes and in evening gales:
Earth from her lap perennial verdure pours,
Ambrosial fruits, and amaranthine flowers;
O'er the wild mountains and luxuriant plains,
Nature in all the pomp of beauty reigns,
In all the pride of freedom. NATURE FREE
Proclaims that MAN was born for liberty.

She flourishes where'er the sunbeams play
O'er living fountains, sallying into day;
She withers where the waters cease to roll,
And night and winter stagnate round the pole.

Man, too, where freedom's beams and foun-
Springs from the dust, and blossoms to the skies:

Dead to the joys of light and life, the slave
(Clings to the clod; his root is in the grave:)
Bondage is winter, darkness, death, despair;
Freedom, the sun, the sea, the mountains,
and the air!

THE CARIBS, AND THEIR EXTERMINATION.

In placid indolence supinely blest,
A feeble race these beauteous isles possessed;
Untamed, untaught, in arts and arms un-
skilled,

Their patrimonial soil they rudely tilled,
Chased the free rovers of the savage wood,
Insured the wild-bird, swept the scaly flood;
Sheltered in lowly huts their fragile forms
From burning suns and desolating storms;
Or, when the halcyon sported on the breeze,
In light canoes they skimmed the rippling seas:

Their lives in dreams of soothing languor
No parted joys, no future pains they knew,
The passing moment all their bliss or care:
Such as the sires had been, the children were
From age to age; as waves upon the tide
Of stormless time, they calmly lived and died.

Dreadful as hurricanes, athwart the main
Rushed the fell legions of invading Spain;
With fraud and force, with false and fatal
breath

(Submission bondage, and resistance death),
They swept the isles. In vain the simple race
Kneeled to the iron sceptre of their grace,
Or with weak arms their fiery vengeance
braved;

They came, they saw, they conquered, they
And they destroyed;—the generous heart
they broke,
They crushed the timid neck beneath the
Where'er to battle marched their fell array,
The sword of conquest ploughed resistless
way;

Where'er from cruel toil they sought repose,
Around, the fires of devastation rose.

The Indian, as he turned his head in flight,
Beheld his cottage flaming through the
night,

And, amidst the shrieks of murder on the
Heard the mute blood-hound's death-step
close behind.

The conflict o'er, the valliant in their
graves,

The wretched remnant dwindled into slaves:
Condemned in pestilential cells to pine,
Delving for gold amidst the gloomy mine,
The sufferer, sick of life-protracting breath,
Inhaled with joy the fire-damp blast of
death;—

Condemned to fell the mountain palm on
That cast its shadow from the evening sky,
Ere the tree trembled to his feeble stroke,
The woodman languished, and his heart-
strings broke;—

Condemned in torrid noon, with palsied hand,
To urge the slow plough o'er the obdurate
land,

The labourer, smitten by the sun's quick ray,
A corpse along the unfinished furrow lay.
O'erwhelmed at length with ignominious toil,
Mingling their barren ashes with the soil,
Down to the dust the Carib people passed,
Like autumn foliage withering in the blast:
The whole race sunk beneath the oppressor's
rod,

And left a blank among the works of God.

Never makes any progress in religion.

PART II.

The sugar cane—Africa—The Negro—The slave-carrying trade. The means and resources of the slave trade—The Portuguese—Dutch—Danes—French—and English in America.

THE SUGAR CANE.

Among the bowers of paradise that graced
Those islands of the world-dividing waste,
Where towering cocoas waved their graceful
locks,

And vines luxuriant clustered round the
rocks;

Where orange-groves perfumed the circling
air,

With verdure, flowers, and fruit for ever fair;
Gay myrtle-foliage tracked the winding rills,
And cedar forests slumbered on the hills;

—An Eastern plant, ingrafted on the soil,
Was tilled for ages with consuming toil:

No tree of knowledge with forbidden fruit,
Death in the taste, and ruin at the root,

Yet in its growth were good and evil found,—
It blessed the planter, but it cursed the

ground; [ter's hoard,

While with vain wealth it gorged the mas-
And spread with manna his luxurious board,

Its culture was perdition to the slave,—
It sapped his life and flourished on his grave.

When the fierce spoiler from remorseless
Tasted the balmy spirit of the cane, [Spain

(Already had his rival in the west,
From the rich reed ambrosial sweetness

pressed), [pose rolled

Dark through his thoughts the miser pur-
To turn his hidden treasures into gold.

But at his breath, by pestilent decay,
The Indian tribes were swiftly swept away;

Silence and horror o'er the isles were spread,
The living seemed the spectres of the dead.

The Spaniard saw; no sigh of pity stole,
No pang of conscience touched his sullen soul;

The tiger weeps not o'er the kid,—he turns
His flashing eyes abroad, and madly burns

For nobler victims, and for warmer blood:
Thus on the Carib shore the tyrant stood,

Thus cast his eyes with fury o'er the tide,
And far beyond the gloomy gulf descried

Devoted Africa: he burst away,
And with a yell of transport grasped his

prey.

AFRICA.

Where the stupendous Mountains of the
Moon

Cast their broad shadows o'er the realms of
noon; [browse

From rude Caffraria, where the giraffes
With stately heads among the forest boughs,

To Atlas, where Numidian lions glow
With torrid fire beneath eternal snow;

From Nubian hills, that hail the dawning day,
To Guinea's coast, where evening fades away,

Regions immense, unsearchable, unknown, [hidden,
Bask in the splendour of the solar zone; [saw]

A world of wonders,—where creation seems
No more the works of Nature, but her

dreams:

Great, wild, and beautiful, beyond control, [do
She reigns in all the freedom of her soul;

Where none can check her bounty when she
showers [flowers;

O'er the gay wilderness her fruits and
None brave her fury, when, with whirlwind

breath [death:

And earthquake step, she walks abroad with
O'er boundless plains she holds her fiery

flight,

In terrible magnificence of light;
At blazing noon pursues the evening breeze

Through the dun gloom of realm-o'ershadow-
ing trces, [quells,

Her thirst at Nile's mysterious fountain
Or bathes in secrecy where Niger swells

An inland ocean, on whose jasper rocks
With shells and sea-flower-wreaths she

binds her locks:

She sleeps on isles of velvet verdure, placed
Midst sandy gulfs and shoals for ever waste;

She guides her countless flocks to cherished
rills,

And feeds her cattle on a thousand hills;
Her steps the wild bees welcome through the

vale,
From every blossom that embalms the gale;

The slow unwieldy river-horse she leads
Through the deep waters, o'er the pasturing

meads;

And climbs the mountains that invade the sky,
 To soothe the eagle's nestlings when they cry.
 At sunset, when voracious monsters burst
 From dreams of blood, awaked by madden-
 ing thirst; [from light,
 When the lorn caves, in which they shrunk
 Ring with wild echoes through the hideous
 night;
 When darkness seems alive, and all the air
 Is one tremendous uproar of despair,
 Horror, and agony;—on her they call:
 She hears their clamour, she provides for all,
 Leads the light leopard on his eager way,
 And goads the gaunt hyæna to his prey.

THE NEGRO.

In these romantic regions Man grows wild:
 Here dwells the Negro, Nature's outcast
 child, [eye,
 Scorned by his brethren; but his mother's
 That gazes on him from her warmest sky,
 Sees in his flexible limbs untutored grace,
 Power on his forehead, beauty in his face;
 Sees in his breast, where lawless passions
 rove.

The heart of friendship and the home of love;
 Sees in his mind, where desolation reigns,
 Pierce as his clime, uncultured as his plains,
 A soil where virtue's fairest flowers might
 shoot,

And trees of science bend with glorious fruit;
 Sees in his soul, involved with thickest night,
 An emanation of eternal light, [fire
 Ordained, midst sinking worlds, his dust to
 And shine for ever when the stars expire.

Is he not *Man*, though knowledge never shed
 Her quickening beams on his neglected head?
 Is he not *Man*, though sweet religion's voice
 Ne'er bade the mourner in his God rejoice?
 Is he not *Man*, by sin and suffering tried?
 Is he not *Man* for whom the Saviour died?
 Belie the Negro's powers:—In headlong
 will, [still:
 Christian! thy brother thou shalt prove him
 Belie his virtues; since his wrongs began,
 His follies and his crimes have stamp'd him
 Man.

THE SLAVE TRADE.

The Spaniard found him such: the island-
 race
 His foot had spurned from earth's insulted
 face;

Among the walls and foundlings of mankind,
 Abroad he looked, a sturdier stock to find;
 A spring of life, whose fountains should sup-
 ply

His channels as he drank the rivers dry:
 That stock he found on Afric's swarming
 plains,

That spring he opened in the Negro's veins;
 A spring, exhaustless as his avarice drew;
 A stock that like Prometheus' vitals grew
 Beneath the eternal beak his heart that tore,
 Beneath the insatiate thirst that drained his
 gore.

Thus, childless as the Caribbeans died,
 Afric's strong sons the ravening waste sup-
 plied;

Of harder fibre to endure the yoke,
 And self-renewed beneath the severing
 stroke;

As grim oppression crushed them to the
 tomb,

Their fruitful parent's miserable womb
 Teemed with fresh myriads, crowded o'er the
 waves,

Heirs to their toil, their sufferings, and their
 graves.

Freighted with curses was the bark that *loads*
 bore

The spoilers of the west to Guinea's shore;
 Heavy with groans of anguish blew the gales
 That swelled that fatal bark's returning sails;
 Old Ocean shrunk as o'er his surface flew
 The human cargo and the demon crew.

--Thenceforth, unnumbered as the waves
 that roll

From sun to sun, or pass from pole to pole,
 Outcasts and exiles, from their country torn,
 In floating dungeons o'er the gulf were
 borne;

—The valiant seized, in peril-daring fight; *negroes - live!*
 The weak, surprised in nakedness and night;
 Subjects by mercenary despots sold; *greedy of gain.*
 Victims of justice prostitute for gold;

Brothers by brothers, friends by friends be-
 trayed;

Snared in her lover's arms the trusting maid;
 The faithful wife by her false lord estranged,
 For one wild cup of drunken bliss ex-
 changed; [boy,

From the brute-mother's knee, the infant
 Kidnapped in slumber, bartered for a toy;

The father, resting at his father's tree,
 Doomed by the son to die beyond the sea:

—All bonds of kindred, law, alliance broke,
 All ranks, all nations crouching to the yoke;

From fields of light, unshadowed climes that lie

Panting beneath the sun's meridian eye;
From hidden Ethiopia's utmost land;
From Zahara's fickle wilderness of sand;
From Congo's blazing plains and blooming woods;

From Whidah's hills, that gush with golden
Captives of tyrant power and dastard wiles,
Dispeopled Africa, and gorged the isles.
Loud and perpetual o'er the Atlantic waves,
For guilty ages, rolled the tide of slaves;
A tide that knew no fall, no turn, no rest,
Constant as day and night from east to west;
Still widening, deepening, swelling in its course,

With boundless ruin and resistless force.

Quickly by Spain's alluring fortune fired,
With hopes of fame and dreams of wealth inspired,

Europe's dread powers from ignominious ease
Started; their pennons streamed on every breeze:

And still where'er the wide discoveries
The cane was planted and the native bled;
While, nursed by fiercer suns, of nobler race,
The Negro tolled and perished in his place.

First, Lusitania,—she whose prows had borne

Her arms triumphant round the car of morn,
—Turned to the setting sun her bright array,
And hung her trophies o'er the couch of day.

Holland,—whose hardy sons rolled back the sea,

To build the halcyon-nest of liberty,
Shameless abroad the enslaving flag unfurled,

And reigned a despot in the younger world.

Denmark,—whose roving hordes, in barbarous times,

Filled the wide north with piracy and crimes,

Awed every shore, and taught their keels to sweep

O'er every sea, the Arabs of the deep,
—Embarked, once more to western conquest led

By Rollo's spirit, risen from the dead.

Gallia,—who vainly aimed, in depth of night,

To hurl old Rome from her Tarpeian height,
(But lately laid, with unprevented blow,
The thrones of kings, the hopes of freedom low),

—Rushed o'er the theatre of splendid toils,
To brave the dangers and divide the spoils.

Britannia,—she who scathed the crest of Spain,

And won the trident sceptre of the main,
When to the raging wind and ravening tide
She gave the huge Armada's scattered pride,
Smit by the thunder-wielding hand that hurled

Her vengeance round the wave-encircled globe:

—Britannia shared the glory and the guilt:
By her were Slavery's island-altars built,
And fed with human victims;—while the cries

Of blood, demanding vengeance from the high
Assailed her traders' grovelling hearts in vain,

—Hearts dead to sympathy, alive to gain,
Hard from impunity, with avarice cold,
Sordid as earth, insensible as gold.

Thus through a night of ages, in whose shade

The sons of darkness plied the infernal trade,
Wild Africa beheld her tribes, at home,
In battle slain; abroad, condemned to roam

O'er the salt waves, in stranger-isles to bear,
(Forlorn of hope, and sold into despair),
Through life's slow journey, to its dolorous close,

Unseen, unwept, unutterable woes.

PART III.

The love of country and of home the same in all ages and among all nations—The Negro's home and country—Mungo Park—Progress of the slave trade—The middle passage—The Negro in the West Indies—The Guinea captain—The Creole planter—The Moors of Barbary—Buccaneers—Maroons—St. Domingo—Hurricanes—The yellow fever.

LOVE OF COUNTRY AND OF HOME.

THERE is a land of every land the pride,
Beloved by Heaven o'er all the world beside;
Where brighter suns dispense serenely light,
And milder moons emparadise the night;
A land of beauty, virtue, valour, truth,
Time-tutored age, and love-exalted youth.
The wandering mariner, whose eye explores
The wealthiest isles, the most enchanting shores,

Views not a realm so bountiful and fair,
Nor breathes the spirit of a purer air;
(In every clime the magnet of his soul,
Touched by remembrance, trembles to that pole;)

For in this land of Heaven's peculiar grace,
The heritage of nature's noblest race,
There is a spot of earth supremely blest,
A dearer, sweeter spot than all the rest,
Where man, creation's tyrant, casts aside,
His sword and sceptre, pageantry and pride,
While in his softened looks benignly blend
The sire, the son, the husband, brother,
friend: [wife,

Here woman reigns; the mother, daughter,
Strews with fresh flowers the narrow way of life;

In the clear heaven of her delightful eye,
An angel-guard of loves and graces lie;
Around her knees domestic duties meet,
And fire-side pleasures gambol at her feet.
"Where shall that land, that spot of earth be found?"

Art thou a man?—a patriot?—look around;
Oh, thou shalt find, how'er thy footsteps roam,
[home:
That land thy country, and that spot thy

On Greenland's rocks, o'er rude Kam-
schatka's plains,
In pale Siberia's desolate domains;
When the wild hunter takes his lonely way,
Tracks through tempestuous snows his
savage prey,

The rein-deer's spoil, the ermine's treasure shares,

And feasts his famine on the fat of bears;
Or, wrestling with the might of raging seas,
Where round the pole the eternal billows freeze, [vain

Plucks from their jaws the stricken whale, in
Plunging down headlong through the whirl-
ling main;

—His wastes of ice are lovelier in his eye
Than all the flowery vales beneath the sky,
And dearer far than Cæsar's palace-dome,
His cavern-shelter, and his cottage-home.

O'er China's garden-fields and peopled
floods;

In California's pathless world of woods;
Round Andes' heights, where Winter, from
his throne,

Looks down in scorn upon the summer zone;
By the gay borders of Bermuda's isles,
Where Spring with everlasting verdure smiles;

(On pure Madeira's vine-robed hills of health;)
In Java's swamps of pestilence and death;
Where Babel stood, where wolves and jackals drink,

'Midst weeping willows, on Euphrates' brink,
On Carmel's crest; by Jordan's reverend
stream, [dream;

Where Canaan's glories vanished like a
Where Greece, a spectre, haunts her heroes'
graves, [waves;

And Rome's vast ruins darken Tiber's
Where broken-hearted Switzerland bewails
Her subject mountains and dishonoured
vales: [crushed to
Where Albion's rocks exult amidst the sea,
Around the beauteous isle of Liberty;

—Man, through all ages of revolving time,
Unchanging man, in every varying clime,
Deems his own land of every land the pride,
Beloved by Heaven o'er all the world beside;
His home the spot of earth supremely blest,—
A dearer, sweeter spot than all the rest.

THE NEGRO'S HOME AND COUNTRY.

And is the Negro outlawed from his birth?
Is he alone a stranger on the earth?

Is there no shed, whose peeping roof appears
So lovely that it fills his eyes with tears?

No land, whose name in exile heard will dart
Ice through his veins and lightning through
his heart?

Ah! yes; beneath the beams of brighter skies,
His home amidst his fathers' country lies;
There with the partner of his soul he shares
Love-mingled pleasures, love-divided cares;
There, as with nature's warmest filial fire
He soothes his blind, and feeds his helpless
sire,

His children sporting round his hut behold
How they shall cherish him when he is old,
Trained by example from their tenderest
youth

To deeds of charity, and words of truth.*

—Is he not blest? Behold, at closing day,
The negro village swarms abroad to play;
He treads the dance through all its rapturous
rounds,

To the wild music of barbarian sounds;
Or, stretched at ease, where broad palmettos
shower ¹/,

Delicious coolness in his shadowy bower,
He feasts on tales of witchcraft, that give birth
To breathless wonder, or ecstatic mirth;
Yet most delighted when, in rudest rhymes,
The minstrel wakes the song of elder times,
When men were heroes, slaves to Beauty's
charms,

And all the joys of life were love and arms.
—Is not the Negro blest? His generous soil
With harvest plenty crowns his simple toil;
More than he wants his flocks and fields af-
ford;

He loves to greet the stranger at his board:
"The winds were roaring and the White Man
died;

The rains of night descended on his head;
The poor White Man sat down beneath our
tree,—

Wearied and faint, and far from home was he:
For him no mother fills with milk the bowl,
No wife prepares the bread to cheer his soul:
—Pity the poor White Man, who sought our
tree,

No wife, no mother, and no home has he."

* Dr. Wintorbottom says, "The respect which the African pays to old people is very great. One of the severest insults which can be offered to an African is to speak disrespectfully of his mother."

Thus sung the Negro's daughters;—once
again,

Oh, that the poor White Man might hear that
strain!

—Whether the victim of the treacherous
Or from the Negro's hospitable door [Moor;
Spurned, as a spy from Europe's hateful clime,
And left to perish for thy country's crime;
Or destined still, when all thy wanderings
cease,

On Albion's lovely lap to rest in peace; [be,
Pilgrim! in heaven or earth, where'er thou
Angels of mercy guide and comfort thee!

PROGRESS OF THE SLAVE TRADE.

Thus lived the Negro in his native land,
Till Christian cruisers anchored on his strand;
Where'er their grasping arms the spoilers
spread,

The Negro's joys, the Negro's virtues, fled;
Till, far amidst the wilderness unknown,
They flourished in the sight of Heaven alone:
While from the coast, with wide and deep
sweep,

The race of Mammon dragged across the deep
Their sable victims, to that western bourn,
From which no traveller might e'er return,
To blazon in the ears of future slaves
The secrets of the world beyond the waves.

When the loud trumpet of eternal doom ²
Shall break the mortal bondage of the tomb;
When with the mother's pangs the expiring
earth

Shall bring her children forth to second birth,
Then shall the sea's mysterious caverns
spread

With human relics, render up their dead:
Though warm with life the heaving surges
glow,

Where'er the winds of heaven were wont to
blow,

In sevenfold phalanx shall the rallying hosts
Of ocean-slumberers join their wandering
ghosts,

Along the melancholy gulf that roars
From Guinea to the Caribbean shores.

Myriads of slaves that perished on the way,
From age to age the shark's appointed prey,
By livid plagues, by lingering tortures slain,
Or headlong plunged alive into the main,
Shall rise in judgment from their gloomy
beds,

And call down vengeance on their murderers
heads.

Yet small the number, and the fortune
blest,
Of those who in the stormy deep found rest,
Weighed with the unremembered millions
more,

That 'scaped the sea to perish on the shore,
By the slow pangs of solitary care,
The deep devouring anguish of despair,
The broken heart, which kindness never heals,
The home-sick passion which the Negro feels,
When, toiling, fainting in the land of canes,
His spirit wanders to his native plains;
His little lovely dwelling there he sees,
Beneath the shade of his paternal trees,
The home of comfort:—then before his eyes
The terrors of captivity arise. [at rest,
—'Twas night:—his babes around him lay
Their mother slumbered on their father's
breast:

A yell of murder rang around their bed;
They woke; their cottage blazed; the vic-
tims fled: [prey;
Forth sprang the ambushed ruffians on their
They caught, they bound, they drove them
far away: [blood;
The white man bought them at the mart of
In pestilential barks they crossed the flood;
Then were the wretched ones asunder torn,
To distant isles, to separate bondage borne,
Denied, though sought with tears, the sad
relief
That misery loves,—the fellowship of grief.

THE NEGRO IN THE WEST INDIES.

The Negro, spoiled of all that nature gave
To freeborn man, thus shrunk into a slave,
His passive limbs to measured tasks confined,
Obeyed the impulse of another mind;
A silent, secret, terrible control,
That ruled his sinews and repressed his soul.
Not for himself he waked at morning light,
Toiled the long day, and sought repose at
night;
His rest, his labour, pastime, strength, and
health,
Were only portions of a master's wealth;
His love—oh, name not love, where Britons
doom
The fruit of love to slavery from the womb!

Thus spurned, degraded, trampled, and
oppressed,
The Negro exile languished in the west,
With nothing left of life but hated breath,
And not a hope except the hope in death,

To fly for ever from the Creole strand,
And dwell a freeman in his father-land.

THE GUINEA CAPTAIN.

Lives there a savage ruder than the slave?
—Cruel as death, insatiate as the grave,
False as the winds that round his vessel blow,
Remorseless as the gulf that yawns below,
Is he who toils upon the wafting flood,
A Christian broker in the trade of blood;
Boisterous in speech, in action prompt and
bold,
He buys, he sells,—he steals, he kills, for
gold.

At noon, when sky and ocean, calm and
clear, [sphere;
Bend round his bark, one blue unbroken
When dancing dolphins sparkle through the
brine,

And sunbeam circles o'er the waters shine;
He sees no beauty in the heaven serene,
No soul-enchanting sweetness in the scene,
But, darkly scowling at the glorious day,
Curses the winds that loiter on their way.

When swollen with hurricanes the billows
rise,
To meet the lightning midway from the
skies;

When from the unburthened hold his shriek-
ing slaves

Are cast at midnight to the hungry waves;
Not for his victims strangled in the deeps,
Not for his crimes the hardened pirate weeps,
But grimly smiling, when the storm is o'er,
Counts his sure gains, and hurries back for
more.

THE CREOLE PLANTER.

Lives there a reptile baser than the slave?
—Loathsome as death, corrupted as the grave,
See the dull Creole, at his pompous board,
Attendant vassals cringing round their lord;
Satiated with food, his heavy eyelids close,
Volutuous minions fan him to repose;
Prone on the poonday couch he loits in vain,
Delirious slumbers rock his maudlin brain;
He starts in horror from bewildering dreams,
His bloodshot eye with fire and frenzy gleams;
He stalks abroad; through all his wonted
rounds,

The Negro trembles, and the lash resounds,
And cries of anguish, stirring through the
air,
To distant fields his dread approach declare.

Mark, as he passes, every head declined;
Then slowly raised,—to curse him from
behind.

This is the veriest wretch on nature's face,
Owned by no country, spurned by every race;
The tethered tyrant of one narrow span,
The bloated vampire of a living man;
His frame,—a fungus form, of dunghill birth,
That taints the air, and rots above the earth;
His soul,—has he a soul, whose sensual breast
Of selfish passions is a serpent's nest?

Who follows headlong, ignorant, and blind,
The vague brute-instinct of an idiot mind;
Whose heart, 'midst scenes of suffering
senseless grown, [stone;

E'en from his mother's lap was chilled to
Whose torpid pulse no social feelings move;
A stranger to the tenderness of love,
His motley harem charms his gloating eye,
Where ebony, brown, and olive beauties vie;
His children, sprung alike from sloth and
vice, [price;

Are born his slaves, and loved at market
Has he a soul? With his departing breath,
A form shall hail him at the gates of death,
The spectre Conscience,—shrieking through
the gloom,

"Man, we shall meet again beyond the tomb."

THE MOORS.

O Africa! amidst thy children's woes,
Did earth and heaven conspire to aid thy foes?
No, thou hadst vengeance. From thy
northern shores

Sallied the lawless corsairs of the Moors,
And back on Europe's guilty nations hurled
Thy wrongs and sufferings in the sister
world:

Deep in thy dungeons Christians clanked
their chains,

Or toiled and perished on thy parching plains.

THE BUCCANEERS.

But where thine offspring crouched be-
neath the yoke,

In heavier peals the avenging thunder broke.
—Leagued with rapacious rovers of the main,
Hayti's barbarian hunters harassed Spain,*
A mammoth race, invincible in might,
Rapine and massacre their dire delight,

* The buccaneers, or pirates who infested the Caribbean sea during the sixteenth and seventeenth centuries, were equally renowned for their valour and brutality.

Peril their element;—o'er land and flood
They carried fire, and quenched the flames
with blood; [coasts;
Despairing captives hailed them from the
They rushed to conquest, led by Carib ghosts.

THE MAROONS.

Tremble, Britannia! while thine islands tell
The appalling mysteries of Obi's spell; *
The wild Maroons, impregnable and free,
Among the mountain-holds of liberty,
Sudden as lightning darted on their foe,
Seen like the flash, remembered like the blow.

ST. DOMINGO.

(While Gallia boasts of dread Marengo's
fight,
And Hohenlinden's slaughter-deluged night,
Her spirit sinks;—the sinews of the brave,
That crippled Europe, shrunk before the
slave;
The demon-spectres of Domingo rise,
And all her triumphs vanish from her eyes.

THE HURRICANE.

God is a spirit, veiled from human sight,
In secret darkness of eternal light;
Through all the glory of his works we trace
The hidings of his counsel and his face;
Nature, and time, and change, and fate fulfil,
Unknown, unknowing, his mysterious will;
Mercies and judgments mark him, every hour,
Supreme in grace, and infinite in power:
Oft o'er the Eden-islands of the West,
In floral pomp, and verdant beauty drest,
Roll the dark clouds of his awakened ire:
—Thunder and earthquake, whirlwind, flood,
and fire, [plains,
'Midst reeling mountains and disparting
Tell the pale world,—'The God of vengeance
reigns.'

THE YELLOW FEVER.

Nor in the majesty of storms alone
The Eternal makes his dread displeasure
known;
At his command the pestilence abhorred
Spreads the poor slave, and smites the haughty
lord:

* African witchcraft.

While to the tomb he sees his friend consigned,
Foreboding melancholy sinks his mind,
Soon at his heart he feels the monster's
fangs,—

They tear his vitals with convulsive pangs;
The light is anguish to his eye, the air
Sepulchral vapours laden with despair;

Now frenzy-horrors rack his whirling brain,
Tremendous pulses throb through every vein;
The firm earth shrinks beneath his torture-
bed,

The sky in ruins rushes o'er his head;
He rolls, he rages in consuming fires,
Till nature, spent with agony, expires.

PART IV.

The Moravian Brethren—Their missions in Greenland, North America, and the West Indies—Christian Negro—
The advocates of the Negroes in England—Granville Sharpe—Clarkson—Wilberforce—Pitt—Fox—The
nation itself—The abolition of the slave trade—The future state of the West Indies—of Africa—of the whole
world—The millennium.

THE MORAVIAN BRETHREN.

Was there no Mercy, mother of the slave!
No friendly hand to succour and to save,
While Commerce thus thy captive tribes
oppressed, [west?

And lowering Vengeance lingered o'er the
Yes, Africa! beneath the stranger's rod
They found the freedom of the sons of God.)

When Europe languished in barbarian
gloom,

Beneath the ghostly tyranny of Rome, [burst
Whose second empire, cowed and mitred,
A phoenix from the ashes of the first;
From Persecution's piles, by bigots fired,
Among Bohemian mountains Truth retired;
There, midst rude rocks, in lonely glens
obscure, [poor,

She found a people scattered, scorned, and
A little flock through quiet valleys led,
A Christian Israel in the desert fed,
While ravening wolves, that scorned the
shepherd's hand,

Laid waste God's heritage through every land.
With these the lovely Exile sojourned long;
Soothed by her presence, solaced by her song,
They toiled through danger, trials, and dis-
tress,

A band of Virgins in the wilderness,
With burning lamps, amid their secret
bowers,

Counting the watches of the weary hours,
In patient hope the Bridegroom's voice to
hear,

And see his banner in the clouds appear:)

But when the morn returning chased the
night, [light:
These stars, that shone in darkness, sunk in
Luther, like Phosphor, led the conquering
day, [away.
His meek forerunners waned, and passed)

THE MORAVIAN MISSIONS.

Ages rolled by, the turf perennial bloomed
O'er the lorn relics of those saints entombed;
No miracle proclaimed their power divine,
No kings adorned, no pilgrims kissed their
shrine;

Cold and forgotten in the grave they slept;
But God remembered them:—their Father
kept

A faithful remnant;—o'er their native clime
His Spirit moved in his appointed time,
The race revived at his almighty breath,
A seed to serve him, from the dust of death.

“Go forth, my sons; through heathen realms
proclaim

Mercy to sinners in a Saviour's name:”
Thus spake the Lord; they heard and they
obeyed;

—Greenland lay wrapt in nature's heaviest
shade;

Thither the ensign of the cross they bore;
The giant barbarians met them on the shore,
With joy and wonder hailing from afar, [star.
Through polar storms, the light of Jacob's

Where roll Ohio's streams, Missouri's
floods.

Beneath the umbrage of eternal woods.

*Give an account of Moravian Brethren & their mission.
 Who were the principal advocates of the Negroes & when
 & by whose exertions was the abolition of the slave trade
 finally 382 effected - Give the substance of future of Africa.*

THE WEST INDIES.

The Red Man roamed, a hunter-warrior wild;
 On him the everlasting Gospel smiled;
 His heart was awed, confounded, pierced,
 subdu'd,
 Divinely melted, moulded, and renewed;
 The bold base Savage, nature's hardest clod,
 Rose from the dust the image of his God.
 And thou, poor Negro! scorned of all man-
 kind;
 Thou dumb and impotent, and deaf and
 blind;
 Thou dead in spirit! toil-degraded slave,
 Crushed by the curse on Adam to the grave;
 The messengers of peace, o'er land and sea,
 That sought the sons of sorrow, stooped to
 thee. [eye;
 —The captive raised his slow and sullen
 He knew no friend, nor deemed a friend
 was nigh,
 Till the sweet tones of Pity touched his
 ears,
 And Mercy bathed his bosom with her tears:
 Strange were those tones, to him those tears
 were strange;
 He wept and wondered at the mighty change,
 Felt the quick pang of keen compunction
 dart,
 And heard a small still whisper in his heart,
 A voice from heaven, that bade the outcast
 rise
 From shame on earth to glory in the skies.

From isle to isle the welcome tidings ran;
 The slave that heard them started into man:
 Like Peter, sleeping in his chains, he lay,—
 The angel came, his night was turned to day;
 "Arise!" his fetters fall, his slumbers flee;
 He wakes to life, he springs to liberty.

THE CHRISTIAN NEGRO.

No more to Demon-Gods, in hideous forms,
 He prayed for earthquakes, pestilence, and
 storms,
 In secret agony devoured the earth,
 And, while he spared his mother, cursed his
 birth:
 To heaven the Christian Negro sent his
 sighs,
 In morning vows and evening sacrifice;
 He prayed for blessings to descend on those
 That dealt to him the cup of many woes;
 Thought of his home in Africa forlorn,—
 Yet, while he wept, rejoiced that he was born.
 No longer, burning with unholy fires,
 He wallowed in the dust of base desires;

Ennobling virtue fixed his hopes above,
 Enlarged his heart, and sanctified his love:
 With humble steps the paths of peace he trod
 A happy pilgrim, for he walked with God.

THE ADVOCATES OF THE NEGROES.

Still slowly spread the dawn of life and day,
 In death and darkness pagan myriads lay:
 Stronger and heavier chains than those that
 bind [mind
 The captive's limbs, enthralled his abject
 The yoke of man his neck indignant bore,
 The yoke of sin his willing spirit wore.

Meanwhile, among the great, the brave
 the free,
 The matchless race of Albion and the sea,
 Champions arose to plead the Negro's cause:
 In the wide breach of violated laws,
 Through which the torrent of injustice rolled,
 They stood: with zeal unconquerably bold,
 They raised their voices, stretched their arms
 to save [slave;
 From chains the freeman, from despair the
 The exile's heart-sick anguish to assuage,
 And rescue Afric from the spoiler's rage.
 She, miserable mother, from the shore,
 Age after age, beheld the barks that bore
 Her tribes to bondage: with distraction
 wrung,
 Wild as the lioness that seeks her young,
 She flashed unheeded lightnings from her
 eyes,
 Her inmost deserts echoing to her cries:
 Till agony the sense of suffering stole,
 And stern unconscious grief benumbed her
 So Niobe, when all her race were slain, [soul
 In ecstasy of woe forgot her pain;
 Cold in her eye serenest horror shone,
 While plying Nature soothed her into stone.

Thus Africa, entranced with sorrow, stood,
 Her fixed eye gleaming on the restless flood:
 —When Sharpe, on proud Britannia's char-
 tered shore, [fore,
 From Libyan limbs the unsanctioned fetters
 And taught the world, that while she rules
 the waves,
 Her soil is freedom to the feet of slaves:
 —When Clarkson his victorious course began,
 Unyielding in the cause of God and man,
 Wise, patient, persevering to the end, [end;
 No guile could thwart, no power his purpose
 He rose o'er Afric like the sun in smiles,
 He rests in glory on the western isles:

alber
 —When Wilberforce, the minister of grace,
 The new Las Casas of a ruined race,
 With angel-might opposed the rage of hell,
 And fought like Michael, till the dragon fell:
 —When Pitt, supreme, amid the senate, rose
 The Negro's friend, among the Negro's foes;
 Yet while his tones like heaven's high thunder broke,

No fire descended to consume the yoke:
 —When Fox, all-eloquent for freedom stood,
 With speech resistless as the voice of blood;
 The voice that cries through all the Patriot's veins,
 [chains;
 When at his feet his country groans in
 The voice that whispers in the mother's breast,

When smiles her infant in his rosy rest;
 Of power to bid the storm of passion roll,
 Or touch with sweetest tenderness the soul.
 He spoke in vain,—till, with his latest breath,
 He broke the spell of Africa in death.

The Muse to whom the lyre and lute belong,
 Whose song of freedom is her noblest song.
 The lyre with awful indignation swept,
 O'er the sweet lute in silent sorrow wept,
 —When Albion's crimes drew thunder from
 her tongue, [she sung.
 —When Africa's woes o'erwhelmed her while
 Lamented Cowper! in thy path I tread;
 Oh, that on me were thy meek spirit shed!
 The woes that wring my bosom once were
 thine;
 Be all thy virtues, all thy genius, mine!
 Peace to thy soul! thy God thy portion be;
 And in his presence may I rest with thee!

Quick at the call of Virtue, Freedom,
 Truth, [youth
 Weak withering age and strong aspiring
 Alike the expanding power of pity felt;
 The coldest, hardest hearts began to melt;
 From breast to breast the flame of justice
 flowed;
 Wide o'er its banks the Nile of mercy flowed;
 "Through all the isle the gradual waters
 swelled; [pelled;
 Mammon in vain the encircling flood re-
 O'erthrown at length, like Pharaoh and his
 host, [the coast.
 His shipwrecked hopes lay scattered round

THE ABOLITION OF THE SLAVE TRADE.

High on her rock in solitary state,
 Sublimely musing, pale Britannia sate:

Her awful forehead on her spear reclined,
 Her robe and tresses streaming with the
 wind: [crept;
 Chill through her frame foreboding tremors
 The Mother thought upon her Sons, and
 wept:

—She thought of Nelson in the battle slain,
 And his last signal beaming o'er the main;
 In Glory's circling arms the hero bled,
 While Victory bound the laurel on his head;
 At once immortal, in both worlds, became
 His soaring spirit and abiding name; [bler:
 —She thought of Pitt, heart-broken on his
 And "O my Country!" echoed in her ear:
 —She thought of Fox;—she heard him
 faintly speak,

His parting breath grew cold upon her cheek,
 His dying accents trembled into air;
 "Spare injured Africa! the Negro spare!"

She started from her trance!—and round
 the shore
 Beheld her supplicating sons once more
 Pleading the suit so long, so vainly tried,
 Renewed, resisted, promised, pledged, denied,
 The Negro's claim to all his Maker gave,
 And all the tyrant ravished from the slave.
 Her yielding heart confessed the righteous
 claim;
 Sorrow had softened it, and love o'ercame;
 Shame flushed her noble cheek, her bosom
 burned;
 To helpless, hopeless Africa she turned;
 She saw her sister in the Mourner's face,
 And rushed with tears into her dark embrace:
 "All hail!" exclaimed the Empress of the sea,
 "Thy chains are broken, Africa, be free!"

THE FUTURE OF THE WEST INDIES.

Muse! take the harp of prophecy:—be-
 hold!
 The glories of a brighter age unfold:
 Friends of the outcast! view the accom-
 plished plan,
 The Negro towering to the height of man.
 The blood of Romans, Saxons, Gauls, and
 Danes,
 Swelled the rich fountain of the Briton's
 veins;
 Unmingled streams a warmer life impart,
 And quicker pulses to the Negro's heart:
 A dusky race beneath the evening sun,
 Shall blend their spousal currents into one:

* "England expects every man to do his duty."

Is beauty bound to colour, shape, or air?
 No; God created all his offspring fair.
 Tyrant and slave their tribes shall never see,
 For God created all his offspring free;
 Then Justice, leagued with Mercy, from
 Shall reign in all the liberty of love; [above,
 And the sweet shores beneath the balmy west
 Again shall be "the islands of the blest."

THE FUTURE OF AFRICA.

Unutterable mysteries of fate
 Involve, O Africa! thy future state.
 —On Niger's banks, in lonely beauty wild,
 A Negro-mother carols to her child:
 "Son of my widowed love, my orphan joy!
 Avenge thy father's murder, O my boy!"
 Along those banks the fearless *infant* strays,
 Bathes in the stream, among the eddies plays;
 See the *boy* bounding through the eager race;
 The fierce *youth*, shouting foremost in the
 chase,
 Drives the grim lion from his ancient woods,
 And smites the crocodile amidst his flood.
 To giant strength in unshorn *manhood* grow,
 He haunts the wilderness, he dwells alone.
 A tigress with her whelps to seize him springs;
 He tears the mother, and he tames the young
 In the drear cavern of their native rock:
 Thither wild slaves and fell banditti flock;
 He heads their hordes; they burst, like
 torrid rains,
 In death and devastation o'er the plains:
 Stronger and bolder grows his ruffian band,
 Prouder his heart, more terrible his hand:
 He spreads his banner; crowding from afar,
 Innumerable armies rush to war;
 Resistless as the pillared whirlwinds fly
 O'er Libyan sands, revolving to the sky,
 In fire and wrath through every realm they
 run, [sun;
 Where the noon-shadow shrinks beneath the

Till at the Conqueror's feet from sea to sea,
 A hundred nations bow the servile knee,
 And throned in nature's unrevealed domains
 The Jenghis Khan of Africa he reigns.

Dim through the night of these tempestu-
 ous years
 A Sabbath dawn o'er Africa appears;
 Then shall her neck from Europe's yoke be
 freed,
 And healing arts to hideous arms succeed;
 At home fraternal bonds her tribes shall bind,
 Commerce abroad espouse them with man-
 kind,
 While Truth shall build, and pure Religion
 bless
 The Church of God amidst the wilderness.

THE MILLENNIUM.

Nor in the isles and Africa alone
 Be the Redeemer's cross and triumph known;
 Father of Mercies! speed the promised hour;
 Thy kingdom come with all-restoring power;
 Peace, virtue, knowledge, spread from pole
 to pole,
 As round the world the ocean waters roll!
 —Hope waits the morning of celestial light;
 Time plumes his wings for everlasting flight;
 Unchanging seasons have their march begun;
 Millennial years are hastening to the sun;
 Seen through thick clouds, by Faith's trans-
 piercing eyes,
 The New Creation shines in purer skies.
 All hail! —the age of crime and suffering
 ends; [descends;
 The reign of righteousness from heaven
 Vengeance for ever sheathes the afflicting
 sword;
 Death is destroyed, and Paradise restored;
 Man, rising from the ruins of his fall,
 Is one with God, and God is All in All.

